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MINUTES OF THE
ACRS SUBCOMMITTEE MEETING ON
REGULATORY ACTIVITIES
APRIL 30, 1980
WASHINGTON, DC

The ACRS Subcommittee on Regulatory Activities held a meeting on April 30, 1980, at 1717 H Street, N.W., Washington, D.C. Notice of this meeting was published on Friday, April 18, 1980, in the Federal Register, Volume 45, Number 77; a copy is included as Attachment A. Mr. Sam Duraiswamy was the Designated Federal Employee for the meeting. A list of meeting attendees is included as Attachment B.

INTRODUCTORY STATEMENT BY THE CHAIRMAN

Dr. Siess, the Subcommittee Chairman, convened the meeting at 8:45 a.m., reviewed briefly the schedule for the meeting, indicating that the Subcommittee will hold discussions with the NRC Staff pertinent to the following items:

1. Regulatory Guide 1.144, Revision 1, "Auditing of Quality Assurance Programs for Nuclear Power Plants".
2. Proposed Regulatory Guide 1.XXX, "Nuclear Power Plant Simulators for Use in Operator Training".

He noted that the Subcommittee had received written comments from General Atomic Company, General Electric Company and the Westinghouse Electric Corporation on Regulatory Guide 1.144, Revision 1. The Subcommittee did not receive any requests from members of the public for time to make oral statements.

REGULATORY GUIDE 1.144, REVISION 1, "AUDITING OF QUALITY ASSURANCE PROGRAMS FOR NUCLEAR POWER PLANTS"

Dr. Siess provided a brief preamble to Regulatory Guide 1.144, Revision 1, indicating that it endorses, with certain exceptions, ANSI/ASME N45.2.12-1977, "Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants". A previous version of this Guide was reviewed by the Regulatory Activities Subcommittee at the May 31, 1978 meeting and was issued for public comment in January 1979. The present version of this Guide reflects consideration of public comments that were received during the public comment period of this Guide.

Indicating that at the May 31, 1978 meeting the Subcommittee asked the NRC Staff to resolve the comments submitted by Westinghouse on the previous version of this Guide, Dr. Siess asked about the action taken by the NRC Staff to resolve Westinghouse's comments.

Mr. Guppy stated that he believes that subsequent to the May 31, 1978 meeting, appropriate changes were made to this Guide to resolve some of concerns expressed by Westinghouse.

Mr. Guppy reviewed briefly some of the changes made to this Guide as a result of public comments:

1. Regulatory Position C.3 has been modified to:
 - a. eliminate reference to other Regulatory Guides and to provide specific guidance,
 - b. provide specific exceptions to audit requirements rather than referring to requirements delineated in ANSI N45.2.13-1976, and
 - c. clarify the point that the specified requirements would be applicable to both prior to and after award of contract procurement phases.
2. Regulatory Position C.3.b.(2)(a), which required that applicable elements of a supplier's quality assurance program should be audited by the purchaser at least annually, has been deleted.
3. Regulatory Position C.5 has been added to include a paragraph of the Discussion Section so as to make it enforceable. This Position states that where more than one purchaser buys from a single supplier, one of the purchasers may perform audit of the supplier on behalf of the other purchasers in order to reduce the number of external audits of the suppliers.
4. Regulatory Position C.6 has been added to reflect the fact that audits are not the only method of verifying implementation of

corrective action; methods other than audits, as specified in 10 CFR Part 50, Appendix B, may also be used for verifying implementation of corrective action.

Mr. Guppy pointed out that several commentors expressed concern about the annual internal audit requirement delineated in Regulatory Position C.3. He stated that the annual frequency for internal audit has been included in several documents (ANSI N45.2.12-1974, WASH-1283 and 1309 dated May 1974) that have been providing guidance on quality assurance requirements. To date, Licensees have committed to an annual internal audit and no exceptions to the annual internal audit frequency have been requested in the topical reports submitted by licensees. Since the NRC Staff believes that the specified annual frequency for internal audit is consistent with the existing NRC practice, they did not make any changes to this requirement.

In response to a question from Mr. Bender as to whether the annual audit requirement will be applied on only certain selected items or on all items, Mr. Morrison stated that it will be applicable to all elements of the quality assurance program.

In response to another question from Mr. Bender with regard to the extent to which the annual audit requirement would be applied on procurement activities, Mr. Morrison stated that he believes that Regulatory Guide 1.123 provides certain guidelines and recommendations with regard to the application of the quality assurance requirements for control of procurement activities. It is not the intent of Regulatory Guide 1.144 to impose the quality assurance requirements on procurement activities. The purchaser has to make judgment with regard to the extent to which he wants to apply the specified quality assurance requirements for control of procurement activities and services.

Indicating that several of the commentors have expressed concern that Regulatory Guide 1.144, Revision 1 specifies excessive quality assurance audit requirements and implementation of such requirements will result in a substantial increase in the number of both internal and external audits conducted by utilities and

other associated organizations, Mr. Bender commented that the NRC Staff did not specify clearly how many additional audits will result from the implementation of the requirements delineated in Regulatory Guide 1.144, Revision 1. He suggested that additional clarification of this issue would be helpful. He stated further that additional information needs to be developed to provide guidance to the Inspection and Enforcement (I&E) group of the NRC for exercising judgment in the audit process.

Mr. Morrison stated that he believes that the annual internal audit requirement specified in Revision 1 to Regulatory Guide 1.144 is consistent with the existing NRC practice; he does not believe that implementation of this requirement will result in any additional audits.

With regard to the NRC Staff's response to some of the public comments, Dr. Siess commented that the NRC Staff's response to certain public comments is inadequate and ambiguous. He believes that the NRC Staff consistently fails to provide explicit clarification to some public comments so as to clear the misinterpretation.

Dr. Siess solicited the opinion of the Subcommittee on the adequacy of the annual internal audit requirement specified in Regulatory Position C.3.

Mr. Bender commented that he does not have any objection to this requirement as long as it is applied to major areas without extending its application to the procurement activities. He suggested that the Subcommittee endorse this requirement with the understanding that the NRC Staff does not intend to extend this requirement for control of procurement activities and services.

Other members of the Subcommittee did not raise any objection to the annual internal audit requirement.

With regard to Mr. Bender's comment, Dr. Siess pointed out the statement made by the NRC Staff in the earlier part of the meeting that the annual internal audit requirement is consistent with the existing NRC practice and the NRC Staff does not intend to extend the application of this requirement to the procurement activities.

April 30, 1980

The Subcommittee discussed briefly the written comments submitted by the Westinghouse Electric Corporation, General Electric Company and the General Atomic Company (Attachment C). The Subcommittee sought some response from the NRC Staff with regard to the concern expressed by the Westinghouse Electric Corporation and the General Electric Company that the requirement delineated in Regulatory Position C.7 is vague, unnecessary and unjustified.

The NRC Staff indicated that Regulatory Position C.7 was added to this Guide to enable I&E to assure that an audit was conducted in accordance with the specified audit programs. Since I&E felt that audit checklists would help them decide whether an audit was conducted in accordance with the applicable requirements, the NRC Staff has included the statement in Regulatory Position C.7 which states that "Additionally, these records should include documents associated with the conduct of audits which support audit findings (for example, audit checklists)". Westinghouse and the General Electric Company were concerned that this Position could be misinterpreted to mean that all documents developed in the course of an audit should be retained. However, it is not the intention of the NRC Staff to require that all documents should be retained. To avoid such confusion and misinterpretation, the NRC Staff intends to modify Regulatory Position C.7 to say that either audit checklists or procedures should be retained.

Dr. Siess commented that most of the commentators seem to have problems in understanding the main intent of the NRC Staff. Regulatory Guides should be written to preclude confusion and misinterpretation; they should specify clearly the main intent of the NRC Staff.

After further discussion, the Subcommittee indicated that it will recommend that the full Committee concur with the Regulatory Position of this Guide during the 241st ACRS meeting.

PROPOSED REGULATORY GUIDE 1.XXX, "NUCLEAR POWER PLANT SIMULATORS FOR USE IN OPERATOR TRAINING"

Mr. Wiebe reviewed briefly the need for the development of this Guide. He stated that based on operating experience and the lessons learned from the

TMI-2 accident, the NRC Staff, along with other technical communities such as the President's Commission and the Special Inquiry Group, who investigated the TMI-2 accident, has realized the need for improvement in operator training to improve operator performance to handle emergency and abnormal situations. Realizing that it would be feasible to perform such improved training on simulators, the NRC Staff has developed this Guide with the intention of initiating improvement in simulator functional requirements.

Mr. Wiebe stated that this Guide endorses, with certain exceptions, the draft ANS Standard ANSI/ANS 3.5, dated March 18, 1980. It describes a method for specifying the functional requirements of the simulators and for specifying similarity requirements between the simulator and its reference plant.

Mr. Holman, from the NRC Staff, pointed out that this Guide requires that each simulator should have a reference plant and the simulator should be kept current with the reference plant changes. However, this Guide does not require that each plant should have a simulator; that is a separate issue and it will be discussed in the proposed revision to 10 CFR Part 55, "Operators' Licenses".

With regard to using the reference plant data as a basis for simulator design, Mr. Bender wondered whether they will be able to obtain all the necessary data from the reference plant operations. He commented further that the fact that simulators can simulate certain events does not necessarily mean that they will be able to provide adequate response to those events that have never happened in real plant operations.

Mr. Wiebe reviewed briefly the requirements delineated in the Regulatory Positions of this Guide (Attachment D, Pages 1 through 6).

Indicating that several short-term studies are proposed or ongoing on simulator improvements as a result of the lessons learned from the TMI-2 accident, Dr. Siess asked for the reasons for issuing this Guide at this time without waiting to see the results of these short-term studies.

April 30, 1980

The NRC Staff stated that the proposed short-term studies are not intended mainly to improve the capabilities of simulators. Moreover, they believe that ANS 3.5 provides some advanced information for improving simulator capabilities. The NRC Staff feels that they should provide some guidance to the industry on the characteristics of nuclear power plant simulators at this time. They do not see any significant advantages in delaying the issuance of this Guide until some of the short-term studies are completed. If the results of the short-term studies provide any additional information on this issue, it will be incorporated into the future revisions of this Guide.

Mr. Ebersole commented that some of the transients that are required to be simulated by a simulator may lead to two-phase cooling problems. He asked whether the simulators will be able to handle two-phase flow problems.

The NRC Staff indicated that they are not sure whether the simulators will be able to handle two-phase flow issues.

After further discussion, the Subcommittee indicated that the NRC Staff could issue this Guide for public comment.

SUBCOMMITTEE'S REMARK ON THE NRC STAFF'S PROCEDURE IN ASSIGNING SPECIFIC IDENTIFICATION NUMBERS TO PROPOSED REGULATORY GUIDES

In a generic sense, the Subcommittee discussed the appropriateness of the NRC Staff's procedure for assigning identification numbers to new Regulatory Guides. The previous practice was to assign specific numbers to Regulatory Guides prior to issuing them for public comment, or definitely prior to submitting them for ACRS concurrence. According to the new procedure, a specific number will not be assigned to a new Regulatory Guide until just before issuing it for industry use. The Subcommittee expressed serious concern about this procedure, indicating that this practice will cause confusion and create problems in keeping track of the history and development of Regulatory Guides. Moreover, since it does not seem appropriate for the ACRS to concur with a Guide without a specific identification number, the Subcommittee recommended strongly that the NRC Staff should assign numbers to new Regulatory Guides prior to submitting them to ACRS for review.

FUTURE MEETING

The NRC Staff indicated that the following items will be submitted for the Subcommittee's review at the June 4, 1980 meeting:

1. Proposed Regulatory Guide 1.23, Revision 1, "Meteorological Programs in Support of Nuclear Power Plants".
2. Proposed Revisions to 10 CFR Part 55, "Operators' Licenses" and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities".

Dr. Siess thanked all the participants and adjourned the meeting at 11:25 a.m.

NOTE: For additional details, a complete transcript of the meeting is available in the NRC Public Document Room, 1717 H St., NW, Washington, DC 20555 or from International Verbatim Reporters, Inc., 499 South Capitol Street, SW, Suite 107, Washington, DC 20002, (202) 484-3550.

**Advisory Committee on Reactor
Safeguards Subcommittee on
Regulatory Activities; Meeting**

The ACRS Subcommittee on Regulatory Activities will hold an open meeting on April 30, 1980, in Room 1167, 1717 H St., N.W., Washington, DC 20555.

In accordance with the procedures outlined in the Federal Register on October 1, 1979 (44 FR 56408) oral or written statements may be presented by members of the public, recordings will be permitted only during those portions of the meeting when a transcript is being kept, and questions may be asked only by members of the Subcommittee, its consultants, and Staff. Persons desiring to make oral statements should notify the Designated Federal Employee as far in advance as practicable so that appropriate arrangements can be made to allow the necessary time during the meeting for such statements.

The agenda for subject meeting shall be as follows:

Wednesday, April 30, 1980

The meeting will commence at 8:45 a.m.

The Subcommittee will hear presentations from the NRC Staff and will hold discussions with this group pertinent to the following:

(1) Regulatory Guide 1.144, Revision 1, "Auditing of Quality Assurance Programs for Nuclear Power Plants" (Post Comment)

(2) Regulatory Guide 1.XXX, "Nuclear Power Plant Simulators for Use in Operator Training" (Pre Comment)

Other matters which may be of a predecisional nature relevant to reactor operation or licensing activities may be discussed following this session.

Persons wishing to submit written statements regarding Regulatory Guide 1.144, Revision 1 may do so by providing a readily reproducible copy to the Subcommittee at the beginning of the meeting. However, to insure that adequate time is available for full consideration of these comments at the meeting, it is desirable to send a readily reproducible copy of the comments as far in advance of the meeting as practicable to Mr. Sam Duraiswamy (ACRS), the Designated Federal Employee for the meeting, in care of ACRS, Nuclear Regulatory Commission, Washington, D.C. 20555 or telecopy them to the Designated Federal Employee (202-634-3319) as far in advance of the meeting as practicable. Such comments shall be based upon documents on file and available for public inspection at the NRC Public Document Room, 1717 H St., N.W., Washington, DC 20555.

Further information regarding topics to be discussed, whether the meeting has been cancelled or rescheduled, the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by a prepaid telephone call to the Designated Federal Employee for this meeting, Mr. Sam Duraiswamy, (telephone 202/634-3267) between 8:15 a.m. and 5:00 p.m., EST.

Dated: April 14, 1980

John C. Hoyle,

Advisory Committee, Management Officer.

(FR Doc. 80-11885 Filed 4-17-80; 8:44 am)

SHL:BOB COGE 7880-61-28

ACRS SUBCOMMITTEE MEETING ON
REGULATORY ACTIVITIES
WASHINGTON, DC
APRIL 30, 1980

ATTENDEES LIST

ACRS

C. P. Siess, Chairman
H. Etherington, Member
M. Bender, Member
J. Ray, Member
J. Ebersole, Member
S. Duraiswamy, Staff*

*Designated Federal Employee

IVRI

M. Winter

NRC

W. M. Morrison, OSD
E. C. Wenziner, OSD
G. Guppy, OSD
J. G. Spraul, QAB
J. S. Wiebe, OSD
J. J. Holman, OLB

KMC, INC.

R. S. Boyd

/copy/

SUBJECT: PROPOSED REGULATORY GUIDE 1.144, "AUDITING OF QUALITY ASSURANCE PROGRAMS FOR NUCLEAR POWER PLANTS"

REFERENCE: Letter, G.A. Arlotto (NRC) to L. G. Marquis (GE) dated April 16, 1980, and enclosures

Enclosures to the reference letter included proposed Revision 1 of the subject regulatory guide and the Value/Impact Assessment for the guide. The following comments relative to the proposed guide and the Value/Impact Evaluation are submitted for consideration by the ACRS Regulatory Activities Subcommittee which is scheduled to meet in Washington, D.C. on April 30, 1980.

1. Regulatory Position C.7: This position was ^{of audits which} not contained in the January 1979, "for comments" issue of the regulatory guide. This new position in the regulatory guide reads, in part, "Additionally, these records should include documents associated with the conduct ~~with~~ support audit findings (for example, audit checklists)." This new position constitutes an escalation in requirements that is unnecessary and unjustified. As stated, the position could be interpreted to mean that any and all documents reviewed or generated in the course of an audit which in any way could support audit findings are to be considered audit records and must be retained. Such records would include directive documents reviewed, completed checklists, any pictures taken, notes, etc. Such documents are only necessary to substantiate findings at the time the audit report is issued. Retaining such documents as audit records serves no valid safety-related purpose and imposes an unjustified burden on those organizations which would commit to compliance with Regulatory Guide 1.144.

Records that do serve a valid purpose such as the audit system plan, individual audit plans, audit reports and written replies, and the record of completions of corrective actions are required to be retained by ANSI/ASME N45.212-1977. It is, therefore, recommended that position C.7 of proposed Regulatory Guide 1.144 be deleted.

2. Value/Impact Assessment: The "Value/Impact Assessment on Auditing of Quality Assurance Programs for Nuclear Power Plants" does not address position C.7 in the proposed regulatory guide. There is no evidence in the assessment that either the value or the impact of proposed position C.7 was evaluated. In our judgment, proposed position C.7 has no safety-related value for the reasons identified in comment 1, above. Further, the impact of such a requirement would be significant in terms of the time, energy, and effort that would be expended in complying with the requirement. From a value/impact standpoint, it is felt that requirement C.7 is unjustified.

Very truly yours,

/sd/

W. P. D'Ardenne, Manager
Safety Evaluation Programs

General Electric Company, 175 CURTNER AVE
San Jose, California 95125

ATTACHMENT C

/copy/



CA understands that the NRC is considering a provision in Regulatory Guide 1.144 covering ANSI N45.2.12 on auditing whereby each element of the QA program must be audited at least once a year. We believe that this provision should be modified. There is a need to provide flexibility in the audit schedule which recognizes the scope and level of activity within the organization being audited as well as the importance of the activities to safety. That is, a graded approach is needed so that those activities that are not important to safety or have not been actively conducted during the time period since the last audit need not be audited every year.





2 of 5

Westinghouse
Electric Corporation

Water Reactor
Divisions

Nuclear Technology Division
Box 355
Pittsburgh, Pennsylvania 15230

April 29, 1980

PAS-EJH-80-309
NS-TMA-2240

Mr. Sam Duraiswamy
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
1717 H Street, N.W.
Washington, D.C. 20555

Subject: Proposed Regulatory Guide 1.144 Revision 1 entitled,
"Auditing of Quality Assurance Programs for Nuclear
Power Plants" (Task RS-035-2)

Dear Sir:

In response to the invitation which appeared in the Federal Register of Friday, April 18, Westinghouse Nuclear Energy Systems would like to take this opportunity to submit written comments and suggestions pertinent to Regulatory Guide 1.144 "Auditing of QA Programs for Nuclear Power Plants."

Westinghouse has reviewed the Regulatory Guide and has identified an area where revision of the guide is merited. The following comment is intended to request modification of an area that does not contribute to the guide's objectives:

In addition to the records requirements of ANSI/ASME N45.2.12-1977, paragraph C.7 of the proposed regulatory guide requires, "...documents associated with the conduct of audits which support audit findings (for example, audit checklists)." However, a Value/Impact of this proposed addition is noticeably absent from section I.C of the Value-Impact Statement. It is believed that the proposed requirement as stated is both vague (as only one example is cited) and not merited, as required audit reports contain information to support audit findings. Accordingly it is recommended that position C.7 be deleted.

Additionally, Westinghouse would like to note the particularly short notice (i.e., April 18, 1980) provided for review and comment on the regulatory guide, its Value-Impact Statement, and associated summary of public comments and their resolutions. As Revision 1 to the guide contains added requirements, a sixty (60) day comment period should be provided.

Mr. Sam Duraiswamy

-2-

3075
April 29, 1980
NS-TMA-2240

Should you desire, Westinghouse would be pleased to further discuss the comments on the attached.

Very truly yours,

T. M. Anderson, Manager
Nuclear Safety Department

P.T. McManus/lk
Attachment

cc:

Mr. Samuel J. Chilk
Secretary of the Commission
U. S. Nuclear Regulatory Commission
1717 H Street
Washington, DC 20555

PREVIOUS WESTINGHOUSE COMMENT

40615

Westinghouse
Electric Corporation

Water Reactor
Divisions

PWR Systems Division
Box 355
Pittsburgh Pennsylvania 15230

NS-TMA-2051

March 9, 1979

Mr. Samuel J. Chilk
Secretary of the Commission
U.S. Nuclear Regulatory Commission
1717 H. Street
Washington, D.C. 20555

Attention: Docketing and Service Branch

Dear Sir:

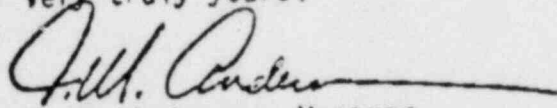
In response to the invitation which appeared in the Federal Register, Westinghouse Nuclear Energy Systems would like to take this opportunity to submit written comments and suggestions pertinent to Regulatory Guide 1.144 "Auditing of QA Programs for Nuclear Power Plants."

Westinghouse has carefully reviewed the Regulatory Guide and has identified several areas where revision of the guide is merited. The attached comments are intended to clarify the provisions of the guide, and to request modification of those areas that do not contribute to its objectives.

In addition, Westinghouse did not receive a value impact statement on this Regulatory Guide. We would like the opportunity to review and comment on the value impact statement, and request that it be forwarded as soon as possible.

Should the Commission desire, Westinghouse would be pleased to further discuss the comments provided on the attached.

Very truly yours,



T. M. Anderson, Manager
Nuclear Safety Department

M. A. Haley/keg
Attachment

Comments on Regulatory Guide 1.144 Auditing of QA Programs for Nuclear Power Plants

Page 1.144-2, Section C.3.a.(2) - Internal Audits

Recommendation: Delete the phrase applicable elements "...should be audited at least annually..." and substitute, "...should be evaluated annually and audited at least on a triennial basis, or at least once within the life of the activity, whichever is shorter."

Recommendation: Add the following sentence after that given above: "The first of the triennial audits should be conducted within the first year when sufficient work is in progress to determine whether the organization is complying with the established quality assurance program."

Justification: An arbitrary annual basis for regularly scheduled internal audits tends to treat all applicable elements of the quality assurance program alike, regardless of the status and importance. Consequently, this schedule may be too frequent for individual activities.

Although an annual basis may simplify schedule review by outside auditors (e.g., NRC, ASME, utilities, etc.), it does not necessarily contribute to the safety of the public. The frequency of audits should be established based upon the type of activity, experience, and other relevant factors. ANSI N45.2.12-1977 provides such latitude in judging the schedule for regular and supplemental audits.

Page 1.144-2, Section C.3.b.(2)(b), Second Sentence - External Audits

Recommendation: Reword as follows: "The first of the triennial audits should be conducted when sufficient work is in progress to determine whether the organization is complying with required quality assurance provisions."

Justification: This wording would allow certain pre-award surveys to fulfill the audit obligation.

III. REVIEW OF ANS 3.5 "NUCLEAR POWER PLANT SIMULATORS FOR USE IN OPERATOR TRAINING"

A. SCOPE

1. ESTABLISHES MINIMUM FUNCTIONAL CRITERIA FOR NUCLEAR POWER PLANT SIMULATORS USED FOR OPERATOR TRAINING
2. SIMULATORS EXCLUDED FROM SCOPE
 - (A) TEST REACTOR SIMULATORS
 - (B) MOBILE REACTOR SIMULATORS
 - (C) RESEARCH REACTOR SIMULATORS
 - (D) SIMULATORS FOR REACTORS NOT SUBJECT TO NRC LICENSING
 - (E) LIMITED SCOPE SIMULATORS

REGULATORY POSITION 1

EXPANDS SCOPE TO INCLUDE SIMULATORS USED FOR TRAINING, ENGINEERING AND MANAGEMENT PERSONNEL.

B. GENERAL REQUIREMENTS

REGULATORY POSITION 3

CLARIFIES THE EXTENT OF SIMULATION BY A SIMULATOR

1. SIMULATOR CAPABILITIES

(A) NORMAL PLANT EVOLUTIONS

REGULATORY POSITION 4

MAKES EVOLUTIONS TO BE SIMULATED MORE EXPLICIT

(B) PLANT MALFUNCTIONS

REGULATORY POSITION 5

RECOMMENDS THAT PURCHASER SPECIFIES MALFUNCTIONS THAT ARE TO HAVE VARIABLE RATE AND SEVERITY CAPABILITY.

ALSO RECOMMENDS EXPANDING DESCRIPTION OF "LOSS OF ELECTRICAL POWER" MALFUNCTION.

2. CONTROL ROOM ENVIRONMENT

(A) CONTROL PANELS

REGULATORY POSITION 6

RECOMMENDS STRENGTHENING THE EXTENT OF SIMILARITY

(B) CONTROL ROOM ENVIRONMENT

3. SYSTEMS TO BE SIMULATED AND DEGREE OF COMPLETENESS

- (A) SYSTEMS CONTROLLED FROM THE MAIN CONTROL PANELS

REGULATORY POSITION 7

RECOMMENDS THAT SYSTEM INTERACTIONS WITH OTHER SYSTEMS BE SIMULATED

- (B) SYSTEMS OPERATED OR FUNCTIONS CONTROLLED OUTSIDE OF THE CONTROL ROOM

REGULATORY POSITION 8

RECOMMENDS CLARIFICATION OF INTERACTIONS WITH REMOTE FUNCTIONS

4. SIMULATOR TRAINING CAPABILITIES

- (A) INITIAL CONDITIONS
(B) MALFUNCTIONS
(C) OTHER CONTROL FEATURES
(D) INSTRUCTOR INTERFACE

5. DOCUMENTATION

C. PERFORMANCE CRITERIA

1. STEADY STATE OPERATION

- (A) INSTRUMENT ERROR
- (B) MASS AND ENERGY BALANCES
- (C) CRITICAL PARAMETERS
- (D) NON-CRITICAL PARAMETERS

2. TRANSIENT OPERATION

- (A) SAME AS STARTUP TEST PROCEDURE ACCEPTANCE CRITERIA
- (B) OBSERVABLE CHANGE CORRESPOND ON DIRECTION AND MAGNITUDE
- (C) NOT VIOLATE PHYSICAL LAWS
- (D) ALARMS AND TRIPS AS IN REFERENCE PLANT
- (E) MALFUNCTIONS AND TRANSIENTS NOT TESTED

D. SIMULATOR UPDATE

1. SIMULATOR DATA BASE UPDATING

- (A) CHANGES TO REFERENCE PLANT EVALUATED FOR APPLICABILITY TO SIMULATOR
- (B) ACTUAL REFERENCE PLANT PERFORMANCE DATA IF OPERATED GREATER THAN 18 MONTHS
- (C) UPDATED TO ACTUAL PLANT PERFORMANCE DATA WITHIN 18 MONTHS AFTER THE REFERENCE PLANT IS IN COMMERCIAL OPERATION OR SIMULATOR IS AVAILABLE, WHICHEVER IS LATER

2. SIMULATOR UPDATING

- (A) ANNUAL REVIEW OF HARDWARE
- (B) REVIEW OF MAJOR MODIFICATIONS

3. USE OF FEEDBACK FOR UPDATING

4. SIMULATOR PERFORMANCE TESTING

(A) PERFORMANCE TEST AND REPORT CONDUCTED

- (1) FOLLOWING INITIAL CONSTRUCTION AND ACCEPTANCE FOR TRAINING
- (2) WHEN THE SIMULATOR IS UPDATED AS REQUIRED IN SECTION 5.1 AND 5.2
- (3) ONCE EVERY 4 YEARS

E. PROCEDURE FOR DOCUMENTING SIMULATOR PERFORMANCE

REGULATORY POSITION 9

RECOMMENDS INCLUDING THIS PORTION AS PART OF STANDARD
RATHER THAN AS A NON-MANDATORY APPENDIX

1. SIMULATOR INFORMATION

- (A) GENERAL
- (B) CONTROL ROOM
- (C) INSTRUCTOR INTERFACE
- (D) OPERATING PROCEDURES FOR SIMULATED PLANT
- (E) CHANGES SINCE LAST REPORT

2. SIMULATOR DATA BASE

- (A) STEADY STATE OPERATING CONDITIONS
- (B) TRANSIENT OPERATING CONDITIONS
- (C) SIGNIFICANT PLANT OCCURRING EVENT (IF APPROPRIATE)
- (D) DESIGN ANALYSIS DATA

3. SIMULATOR TESTS

- (A) NORMAL OPERATION
- (B) ABNORMAL OPERATIONS
- (C) PLANS FOR UPGRADING

REGULATORY POSITION 10

RECOMMENDS CLARIFYING TERMINOLOGY