J. Norberg DOCKET NUMBER
GM 705-5 PROPOSED RULE PR-Misc. Notice
Reg Guide

GENERAL ELECTRIC

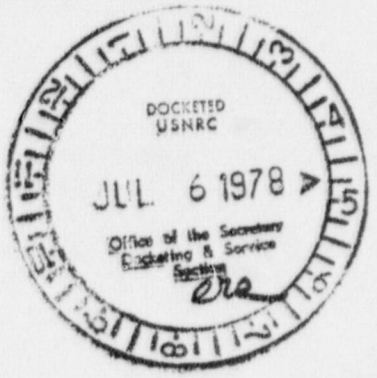
NUCLEAR ENERGY

PROJECTS DIVISION

GENERAL ELECTRIC COMPANY, 175 CURTNER AVE., SAN JOSE, CALIFORNIA 95125

MC 682, (408) 925-5040

MFN 265-78
WHD 151-78



June 26, 1978

U.S. Nuclear Regulatory Commission
Secretary of the Commission
Washington, D.C. 20555

Attention: Chief, Docketing and Service Section

Gentlemen:

SUBJECT: GENERAL ELECTRIC COMMENTS ON REGULATORY GUIDE 1.141, "CONTAINMENT ISOLATION PROVISIONS FOR FLUID SYSTEMS," DATED APRIL 1978

References:
1) ANSI, "Style Manual for Preparation of Proposed American National Standards," August 1972
2) ANSI, "American National Standards Institute Procedures for Management and Coordination of American National Standards," February 1975

The General Electric Company has reviewed the subject guide. As a result of this review, the General Electric Company has identified several deficiencies of sufficient importance to be of concern. .

One area of considerable concern is the application of Appendix A, "Typical Boiling Water Reactor System Diagrams," of ANSI N271-1976, "Containment Isolation Provisions for Fluid Systems." The purpose of Appendix A is to illustrate the application of isolation provisions to BWR designs. A second area of concern is the application of the footnotes of ANSI N271-1976. The references in the footnotes are cited to identify guidance. General Electric has determined, however, that the figures of Appendix A and the footnotes associated with the main text of the standard are not representative of current BWR designs approved by the NRC in licensing documentation. In fact, the information contained in Appendix A and the footnotes is substantially obsolete when compared with current designs. Examples of corrected figures and footnotes are provided in Attachment 1. Therefore, the application of Appendix A and the footnotes should be clarified.

Attached is a copy of comments submitted to Jim Mallay, Chairman of the ANS-50 Committee. The comments are considered necessary to provide clarification on the main text of the standard and to rectify the obsoleteness of Appendix A and the footnotes.

7-7-78

7810140077

The NRC has taken the position (Section B, last sentence) that all recommendations of ANSI N271 are considered to be of sufficient importance to safety to be endorsed along with the requirements given in the standard. This position has fostered some uncertainty as to the nature of the application of Appendix A and the footnotes in the guide. Appendix A and the footnotes are not officially a part of the standard, and this fact is explicitly stated in the preamble to Appendix A and references 1) and 2). Further, the information contained in Appendix A and the footnotes was provided for illustration purposes only, and this purpose is explicitly stated in the second to the last paragraph in the foreword to the standard and references 1) and 2).

General Electric believes that Appendix A, primarily, is acceptable for illustrating containment isolation provisions conceptually or in principle. However, the NRC should clarify that Appendix A and the footnotes are not mandatory and are not necessarily representative of BWR designs acceptable for meeting regulatory position on containment isolation. Recommended wording to satisfactorily address this concern is provided in Attachment 1.

Other substantial comments relate to: (1) position requirements for motor operated valves, (2) requirements for indication circuits and associated actuation circuits, (3) guard pipe guidance, and (4) test provisions on 10CFR50 Appendix J. These subjects are discussed in detail in Attachment 1.

If you have any questions regarding this letter, you may contact Robert J. Murillo of my staff, (408) 925-3406.

Glenn Sherwood

Glenn G. Sherwood, Manager
Safety and Licensing Operation

ATTACHMENT 1

General Electric Company Comments on Regulatory Guide 1.141,
"Containment Isclation Provisions For Fluid Systems,"
Dated April 1978

1. ANSI N271-1976, Appendix A

Proposed Change:

The following position should be incorporated in the guide as Regulatory Position C.1, and the other positions numbered accordingly:

"The footnotes and appendices in ANSI N271 are not part of the standard. The information contained in the footnotes and appendices is illustrative guidance, and adherence to such information is not mandatory in order to comply with 10CFR50, Appendix A."

Justification:

The last sentence in Section D of the Regulatory Guide, which reads: "All recommendations are considered to be of sufficient importance to safety to be endorsed with the requirements in the standard," has lead some reviewers to believe that the guidance of the footnotes and appendices are mandatory. This interpretation has occurred since the last sentence in the discussion section of the guide was interpreted to overrule the second-to-the-last paragraph in the foreword of the standard, which reads: "The appendices are provided to illustrate application of the standard, but are not mandatory or part of the standard."

Examples of areas where Appendix A is deficient are the following:

A. The guidance on guard pipes inside the containment, such as Figures A-1, A-2, A-4 and A-5:

   a. The guidance for guard pipes and the associated criteria are not within the scope of ANSI N271-1976.

   b. The criteria applied in ANSI N271 are not consistent with currently applied criteria, such as SRP 3.6.1, SRP 3.6.2, and Regulatory Guide 1.29. For example, Figure A-2 shows a guard pipe on the RHR system shutdown return line which is not required by current regulatory criteria, (reference 238NI GESSAR).

   c. Guard pipe requirements are, in general, containment-drywell-system/operation unique and therefore cannot be applied "generically" as implied/required by ANSI N271.

B. The guidance on valve testing, such as Figures A3 (TC on Inboard Valve (1)) and A-6 (TB on the inside of the suppression pool):

The subject of valve testing is not a principal topic of the standard, and therefore the information on valve testing is piecemeal and does not represent optimum test provisions. For example, the TC provision on the inboard of valve (1) indicates that valve (1) is tested. The TC provision is in direct contradiction with NEDO-21424, "238 Nuclear Island Containment Bypass Leakage Sealing and Testing Methods," which specifies that valve (1) need not be tested because of closed loop exemptions and 10CFR50, Appendix J criteria.

Acceptable criteria and requirements for valve testing are contained in 10CFR50, Appendix J. The guidance of ANSI N271 on valve testing should be set aside until more up-to-date and comprehensive valve testing guidance, for example, draft ANSI-56.8 N274, "Containment System Leakage Testing Requirements," is officially promulgated.

2. ANSI N271-1976, Section 3.3.2(4)

Proposed Change:

The following position should be incorporated in the regulatory position of the guide:

"When a single active failure is assumed, at least one isolation valve per pipeline shall take the position of greatest safety."

Justification:

Section 3.3.2(4) of ANSI N271 specifies that automatic isolation valves shall be designed to take the position that provides the greatest safety. This requirement could be interpreted to mean that all valves shall move to their safest position following loss of motor power. The inherent design of motor-operated valves does not provide for closure upon loss of electrical power. The key safety objective is not necessarily assuring specific valve positions, but rather assuring the proper isolation of pipelines.

The proper isolation of pipelines when using motor-operated valves is achieved by redundancy and single-failure considerations, for example, providing redundant motor-operated valves powered from different electrical divisions. Thus, the proposed change is required to preclude the unjustifiable interpretation that each motor-operated valve shall move to its safest position following loss of electrical power.

3. ANSI N27T-1976, Section 4.2.3

Proposed Change:

The second sentence of Section 4.2.3 should be modified as follows: "The indicating circuit shall be classified IE unless a failure of the indication circuits could not cause a failure of the actuation circuit."

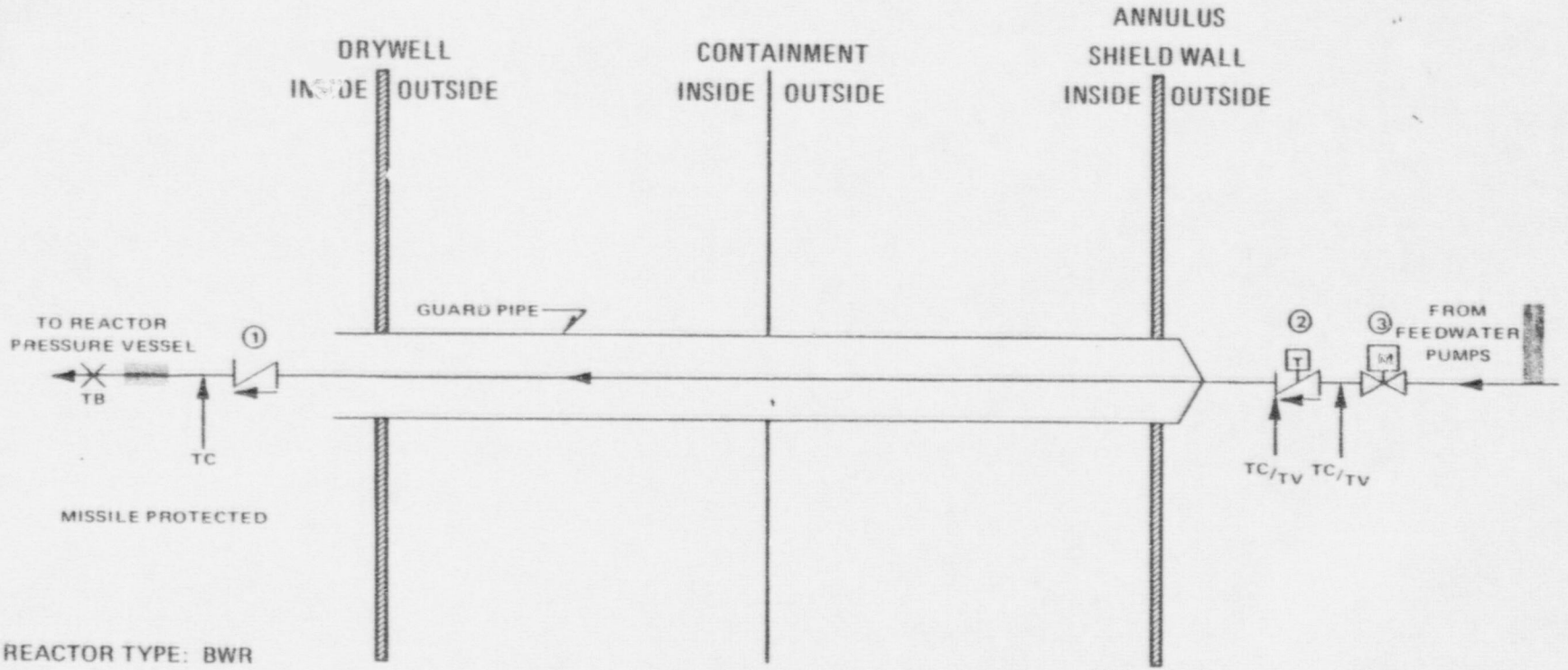
Justification

Class IE indication circuits are connected in some instances to isolation valve control circuits. These indication circuits provide positive indication of the power availability of individual control circuits. Further, redundant Class IE circuits are physically separated and environmentally qualified. Seismic testing of finished panels, where the lights and circuits are mounted, has substantiated that failures of indication circuits are unlikely as a result of a Seismic I event. Also, a single failure of an indication circuit in one valve is acceptable because the isolation function would still be carried out by the redundant valve. Thus, the proposed change is necessary to permit positive indication of control circuits and to preclude an overextension of the single-failure criterion.

RJM:pat/1177-1179

TYPICAL FEEDWATER SYSTEM

Feedwater Lines



REACTOR TYPE: BWR

	VALVE DESIGNATION / NRC DESIGN CRITERIA	VALVE TYPE	ACTUATION: PRIMARY MODE	ACTUATION: SECONDARY MODE	VALVE POSITION: NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST LOCA	VALVE POSITION: POWER FAILURE	ISOLATION SIGNAL	LINE SIZE (inches)	CLOSURE TIME (seconds)	ENGINEERED SAFETY FEATURE	SAFETY CLASS	REMARKS
1	55	CHECK	BACKFLOW	—	OPEN	CLOSED	OPEN OR CLOSED	—	—	20	35	NO	1	SEE NOTE 55 1
2	55	POSITIVE CHECK	BACKFLOW	REMOTE MANUAL	OPEN	CLOSED	OPEN OR CLOSED	CLOSED	—	20	35	NO	1	
3	55	GATE	REMOTE MANUAL	MANUAL	OPEN	CLOSED	OPEN OR CLOSED	AS IS	—	20	59	NO	1	

LEGEND	
	New Change

Figure A-1

TYPICAL EMERGENCY CORE COOLING SYSTEM

Influent Line

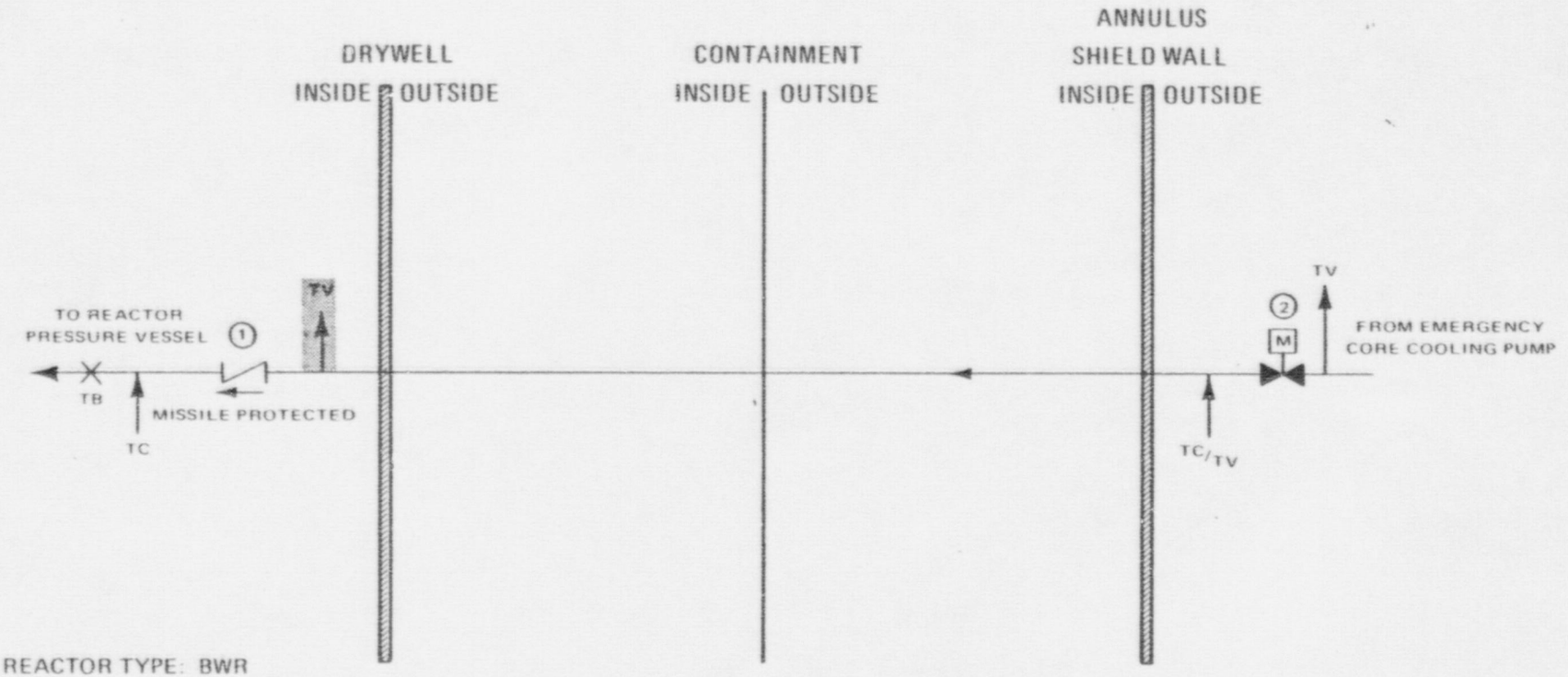


Figure A-2

REACTOR TYPE: BWR

VALVE DESIGNATION	NRC DESIGN CRITERIA	VALVE TYPE	ACTUATION: PRIMARY MODE	ACTUATION: SECONDARY MODE	VALVE POSITION: NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST LOCA	VALVE POSITION: POWER FAILURE	ISOLATION SIGNAL	LINE SIZE (inches)	CLOSURE TIME (seconds)	ENGINEERED SAFETY FEATURE	SAFETY CLASS	REMARKS
1	55	CHECK	BACKFLOW	—	CLOSED	CLOSED	OPEN	—	—	12	3 5	YES	1	SEE NOTE 55 2
2	55	GATE	REMOTE MANUAL	MANUAL	CLOSED	CLOSED	OPEN	AS IS	—	12	59	YES	1	

LEGEND	
	New Change

TYPICAL MAIN STEAM SYSTEM

Main Steam Lines

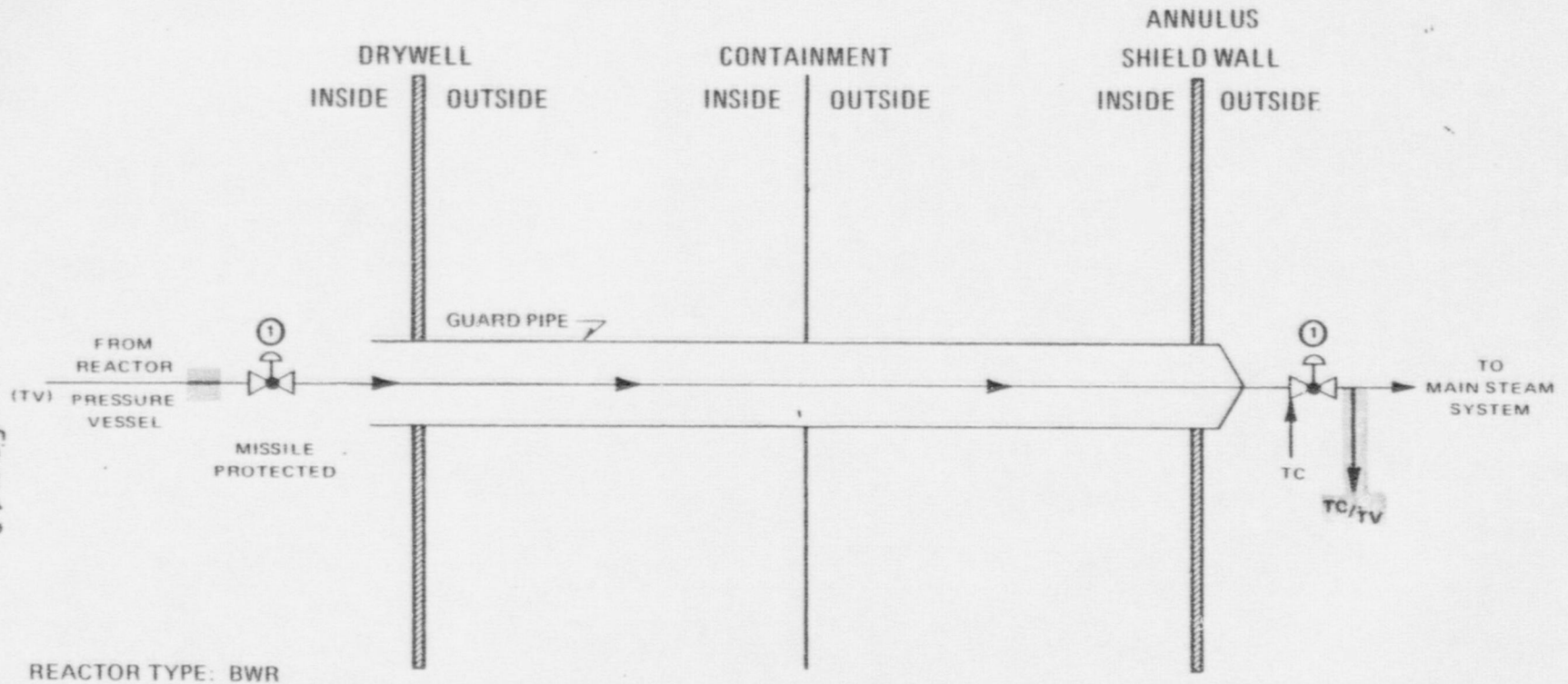


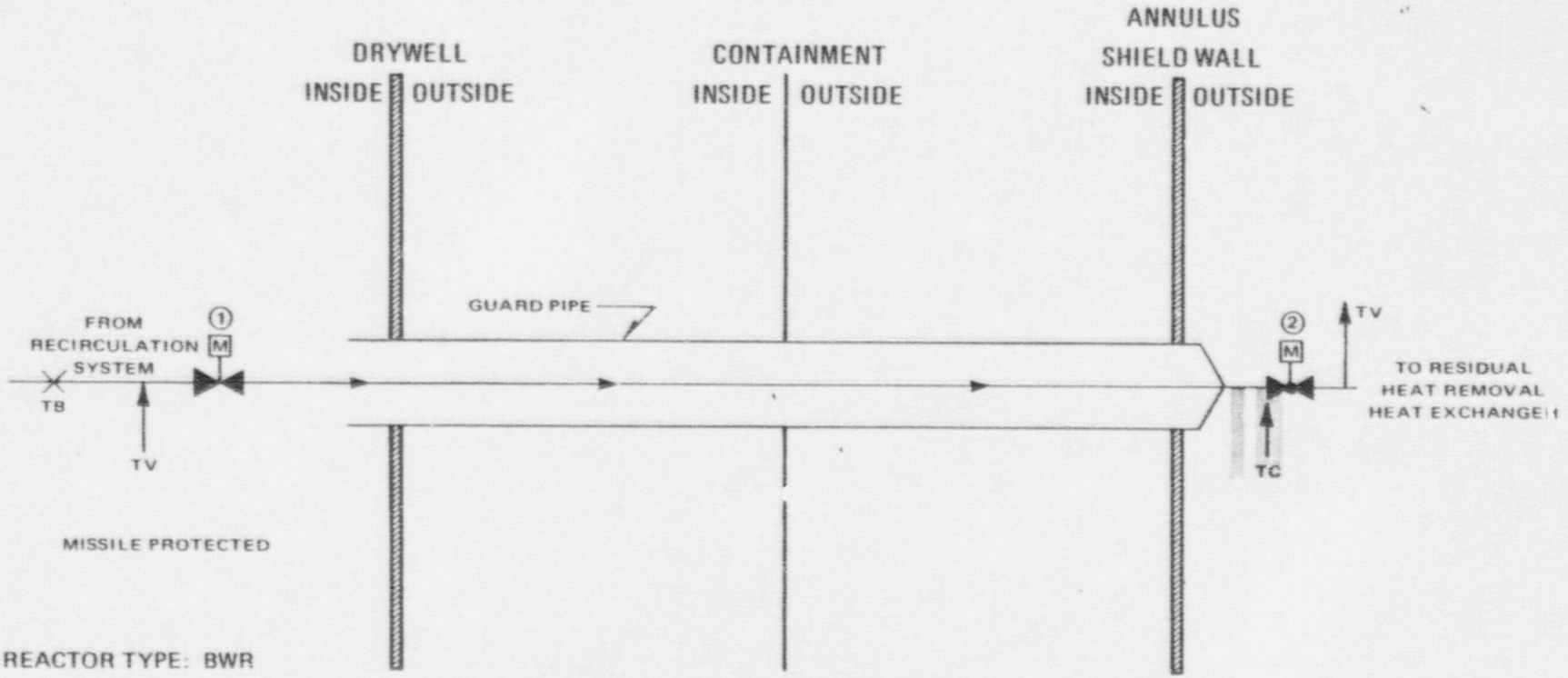
Figure A-3

REACTOR TYPE: BWR

VALVE DESIGNATION	NRC DESIGN CRITERIA	VALVE TYPE	ACTUATION: PRIMARY MODE	ACTUATION: SECONDARY MODE	VALVE POSITION: NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST LOCA	VALVE POSITION: POWER FAILURE	ISOLATION SIGNAL	LINE SIZE (inches)	CLOSURE TIME (seconds)	ENGINEERED SAFETY FEATURE	SAFETY CLASS	REMARKS
1	55	GLOBE	AUTOMATIC	REMOTE MANUAL	OPEN	CLOSED	CLOSED	CLOSED	5	26	3 10	NO	1	

LEGEND	
	New Change

TYPICAL RESIDUAL HEAT REMOVAL SYSTEM
Effluent Lines



REACTOR TYPE: BWR

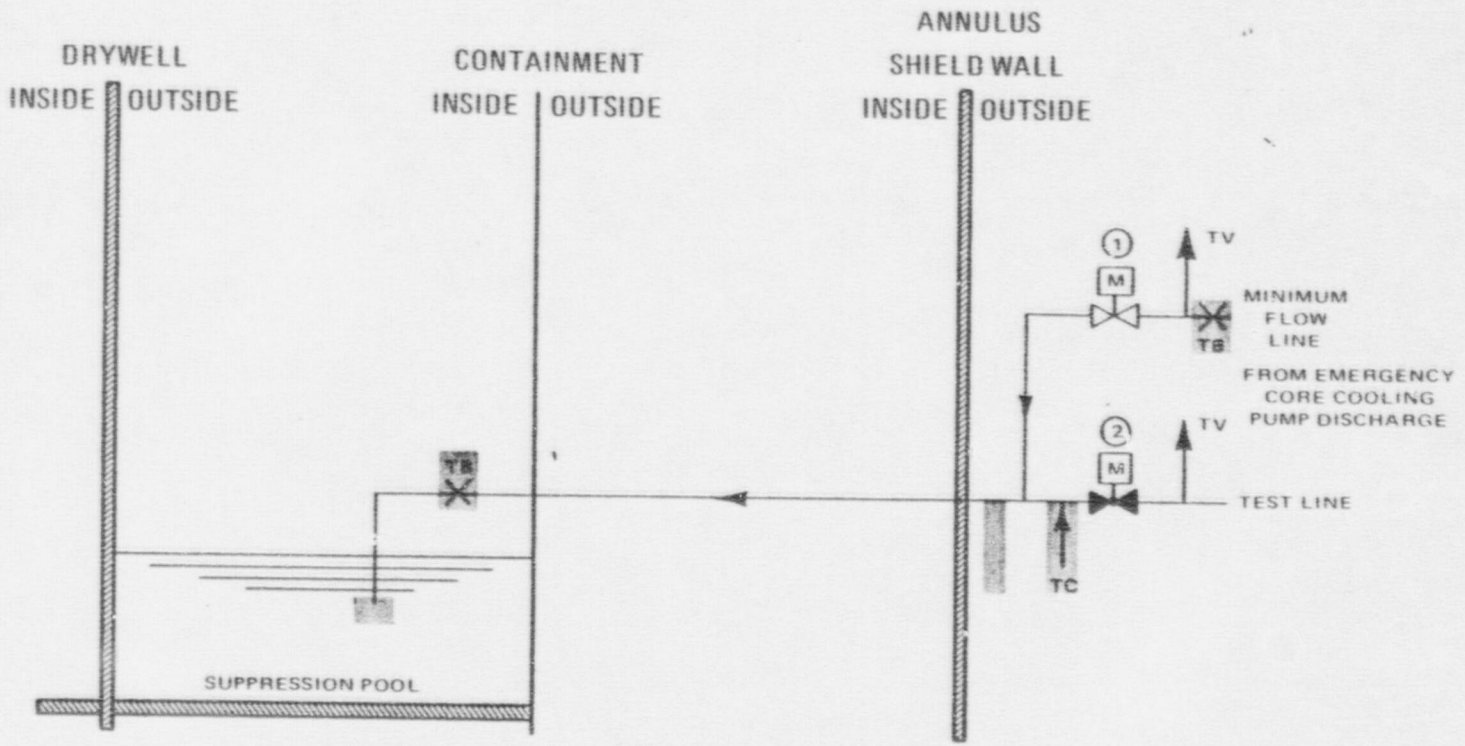
VALVE DESIGNATION	NRC DESIGN CRITERIA	VALVE TYPE	ACTUATION: PRIMARY MODE	ACTUATION: SECONDARY MODE	VALVE POSITION: NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST LOCA	VALVE POSITION: POWER FAILURE	ISOLATION SIGNAL	LINE SIZE (inches)	CLOSURE TIME (seconds)	ENGINEERED SAFETY FEATURE	SAFETY CLASS	REMARKS
1	55	GATE	AUTOMATIC	REMOTE MANUAL	CLOSED	OPEN	CLOSED	AS IS	U, L	12	59	NO	1	
2	55	GLOBE	AUTOMATIC	REMOTE MANUAL	CLOSED	OPEN	CLOSED	AS IS	U, L	12	59	NO	1	

LEGEND	
	New Change

Figure A-4

TYPICAL LINES WHICH CONNECT TO SUPPRESSION POOL

Minimum Flow And Test Lines



REACTOR TYPE: BWR

VALVE DESIGNATION	NRC DESIGN CRITERIA	VALVE TYPE	ACTUATION: PRIMARY MODE	ACTUATION: SECONDARY MODE	VALVE POSITION: NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST LOCA	VALVE POSITION: POWER FAILURE	ISOLATION SIGNAL	LINE SIZE (inches)	CLOSURE TIME (seconds)	ENGINEERED SAFETY FEATURE	SAFETY CLASS	REMARKS
1	56	GATE	AUTOMATIC	REMOTE MANUAL	OPEN	CLOSED	CLOSED	AS IS	B, L	1	5	NO	2	SEE NOTE 56.1
2	56	GLOBE	AUTOMATIC	REMOTE MANUAL	OPEN	CLOSED	OPEN	AS IS	B, L	16	59	NO	2	

LEGEND
New Change

Figure A-5

TYPICAL CONTAINMENT VENTILATION SYSTEM

Influent Line

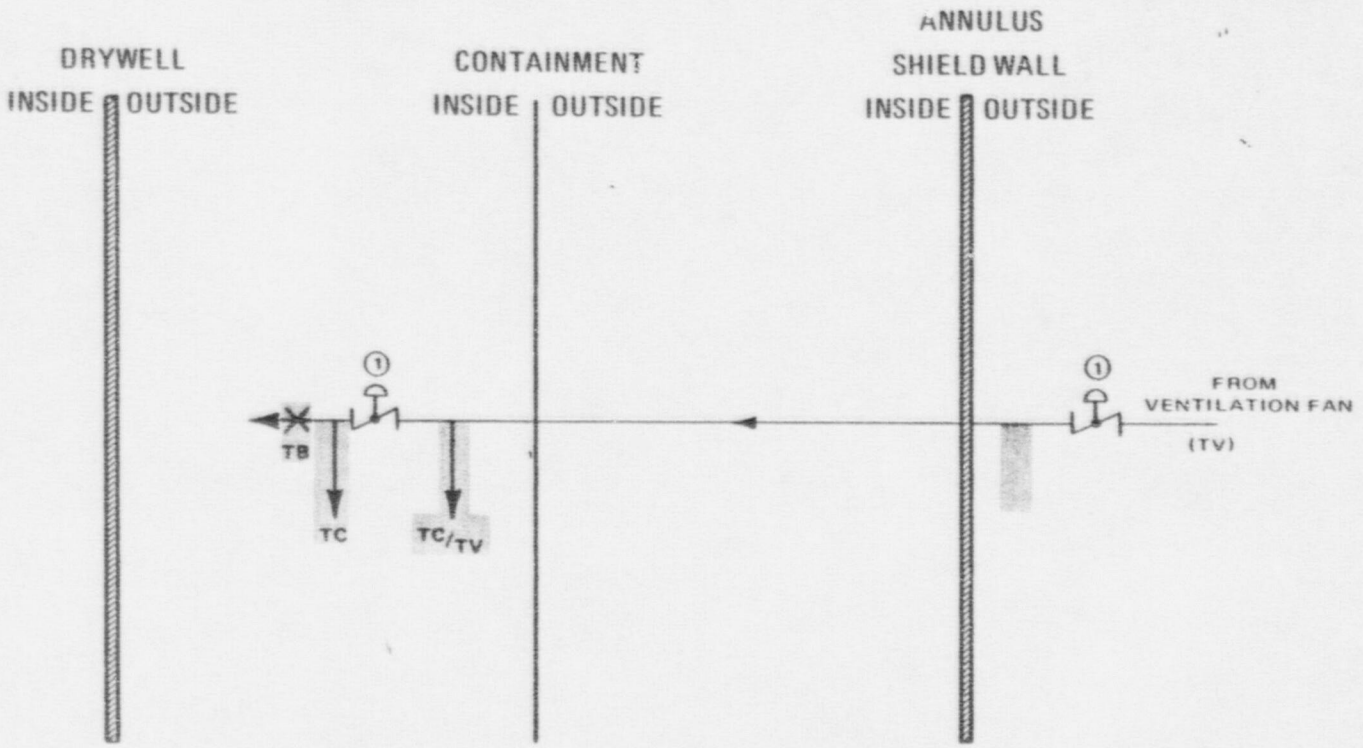


Figure A-6

REACTOR TYPE: BWR

VALVE DESIGNATION	NRC DESIGN CRITERIA	VALVE TYPE	ACTUATION: PRIMARY MODE	ACTUATION: SECONDARY MODE	VALVE POSITION: NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST LOCA	VALVE POSITION: POWER FAILURE	ISOLATION SIGNAL	LINE SIZE (inches)	CLOSURE TIME (seconds)	ENGINEERED SAFETY FEATURE	SAFETY CLASS	REMARKS
1	56	BUTTERFLY	AUTOMATIC	REMOTE MANUAL	OPEN	OPEN	CLOSED	CLOSED	A, L, M	42	59	NO	2	

LEGEND	
	New Change

TYPICAL CONTAINMENT PRESSURIZATION SYSTEM

Pressurization Line

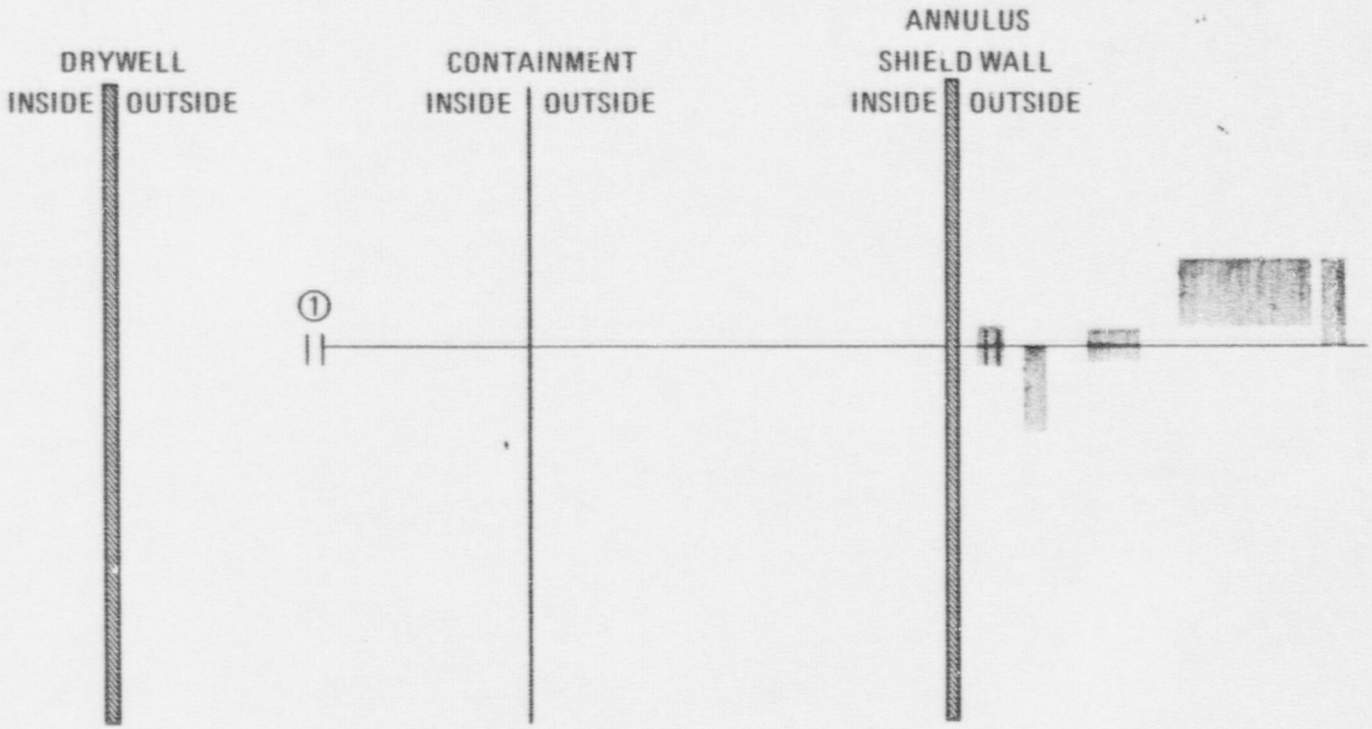


Figure A-7

REACTOR TYPE: BWR

	VALVE DESIGNATION / NRC DESIGN CRITERIA	VALVE TYPE	ACTUATION: PRIMARY MODE	ACTUATION: SECONDARY MODE	VALVE POSITION: NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST LOCA	VALVE POSITION: POWER FAILURE	ISOLATION SIGNAL	LINE SIZE (inches)	CLOSURE TIME (seconds)	ENGINEERED SAFETY FEATURE	SAFETY CLASS	REMARKS
1	56	BLIND FLANGE	—	—	CLOSED	CLOSED	CLOSED	—	—	3	—	NO	2	
2	56	BLIND FLANGE	—	—	CLOSED	CLOSED	CLOSED	—	—	3	—	NO	2	

LEGEND	
	New Change

TYPICAL LINES WHICH CONNECT TO SUPPRESSION POOL

Pump Suction Line

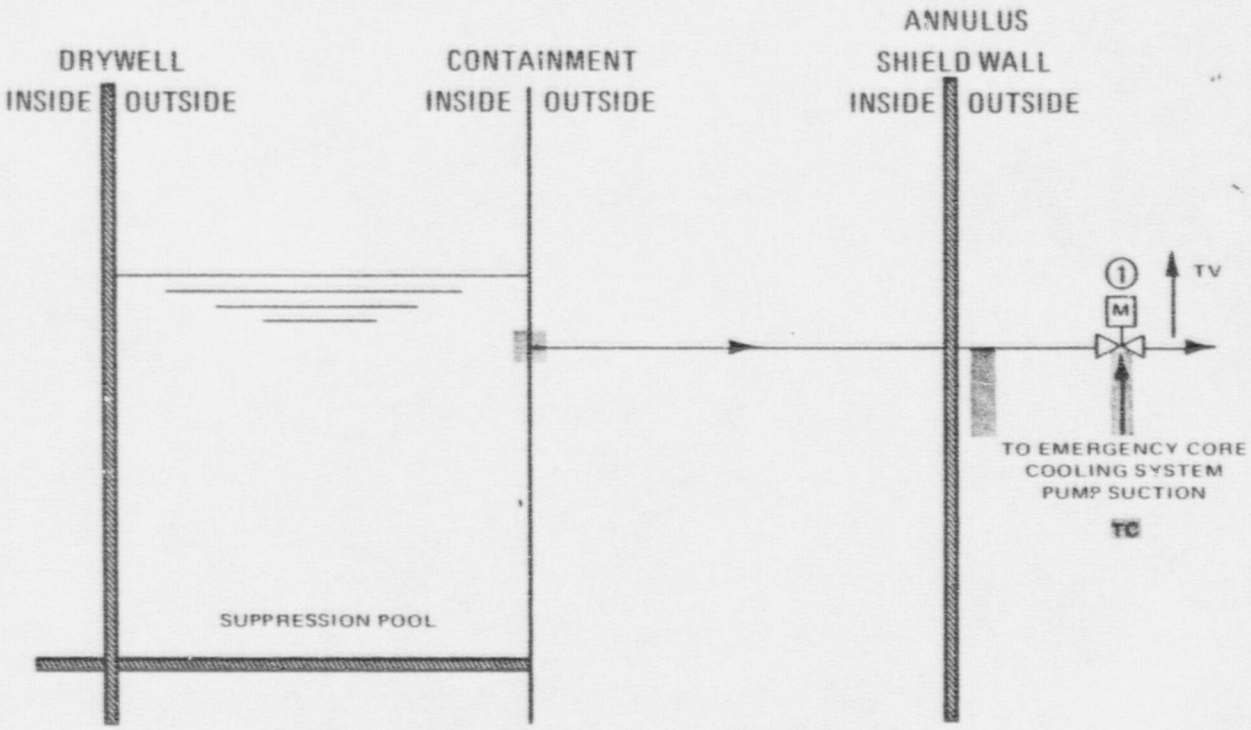


Figure A-8

REACTOR TYPE: BWR

VALVE DESIGNATION	NRC DESIGN CRITERIA	VALVE TYPE	ACTUATION: PRIMARY MODE	ACTUATION: SECONDARY MODE	VALVE POSITION: NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST LOCA	VALVE POSITION: POWER FAILURE	ISOLATION SIGNAL	LINE SIZE (inches)	CLOSURE TIME (seconds)	ENGINEERED SAFETY FEATURE	SAFETY CLASS	REMARKS
1	56	GATE	REMOTE MANUAL	MANUAL	OPEN	OPEN	OPEN	AS IS	—	24	59	YES	2	SEE NOTE 56 1
				)										

LEGEND	
	New Change

TYPICAL CONTAINMENT VENTILATION SYSTEM

Effluent Line

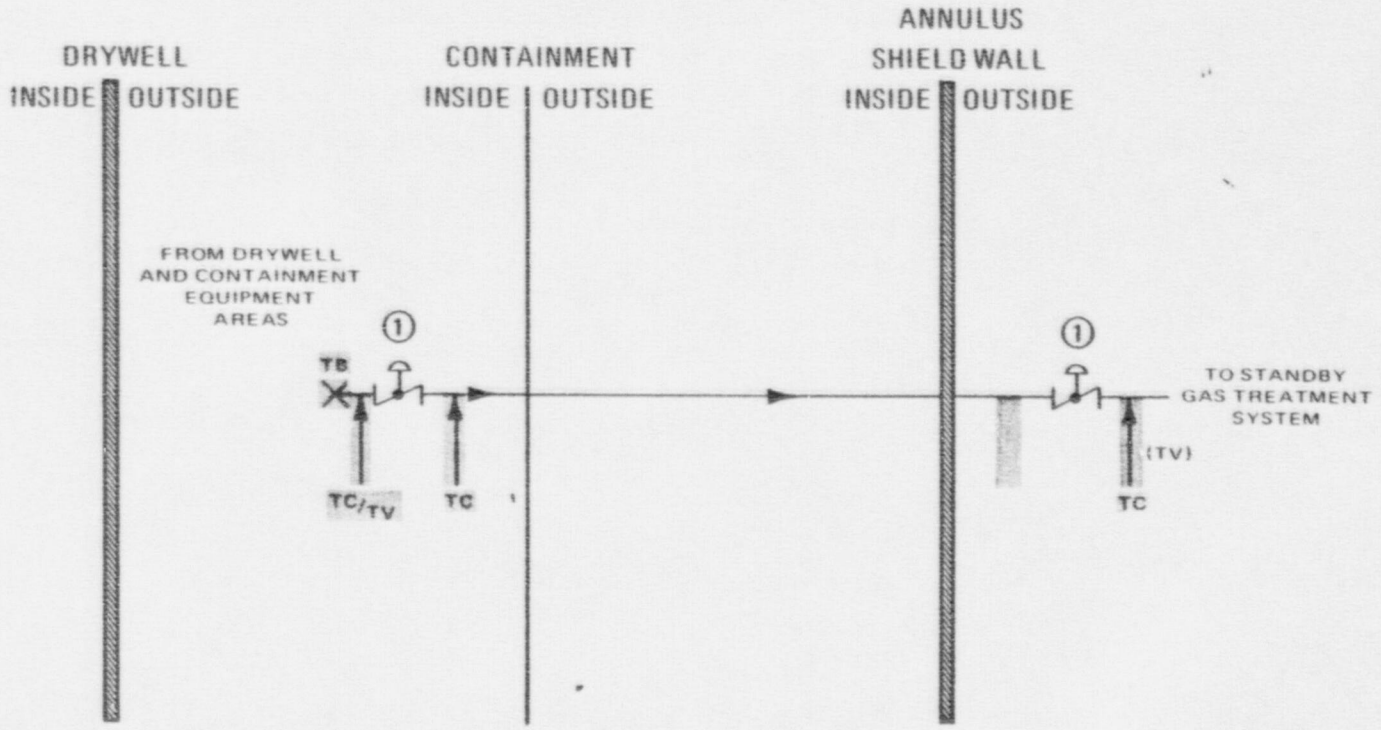


Figure A-9

REACTOR TYPE: BWR

VALVE DESIGNATION	NRC DESIGN CRITERIA	VALVE TYPE	ACTUATION: PRIMARY MODE	ACTUATION: SECONDARY MODE	VALVE POSITION: NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST LOCA	VALVE POSITION: POWER FAILURE	ISOLATION SIGNAL	LINE SIZE (inches)	CLOSURE TIME (seconds)	ENGINEERED SAFETY FEATURE	SAFETY CLASS	REMARKS
1	56	BUTTERFLY	AUTOMATIC	REMOTE MANUAL	OPEN	OPEN	CLOSED	CLOSED	A, L, M	42	59	NO	2	

LEGEND	
	New Change

TYPICAL INSTRUMENT SYSTEM

Instrument Line

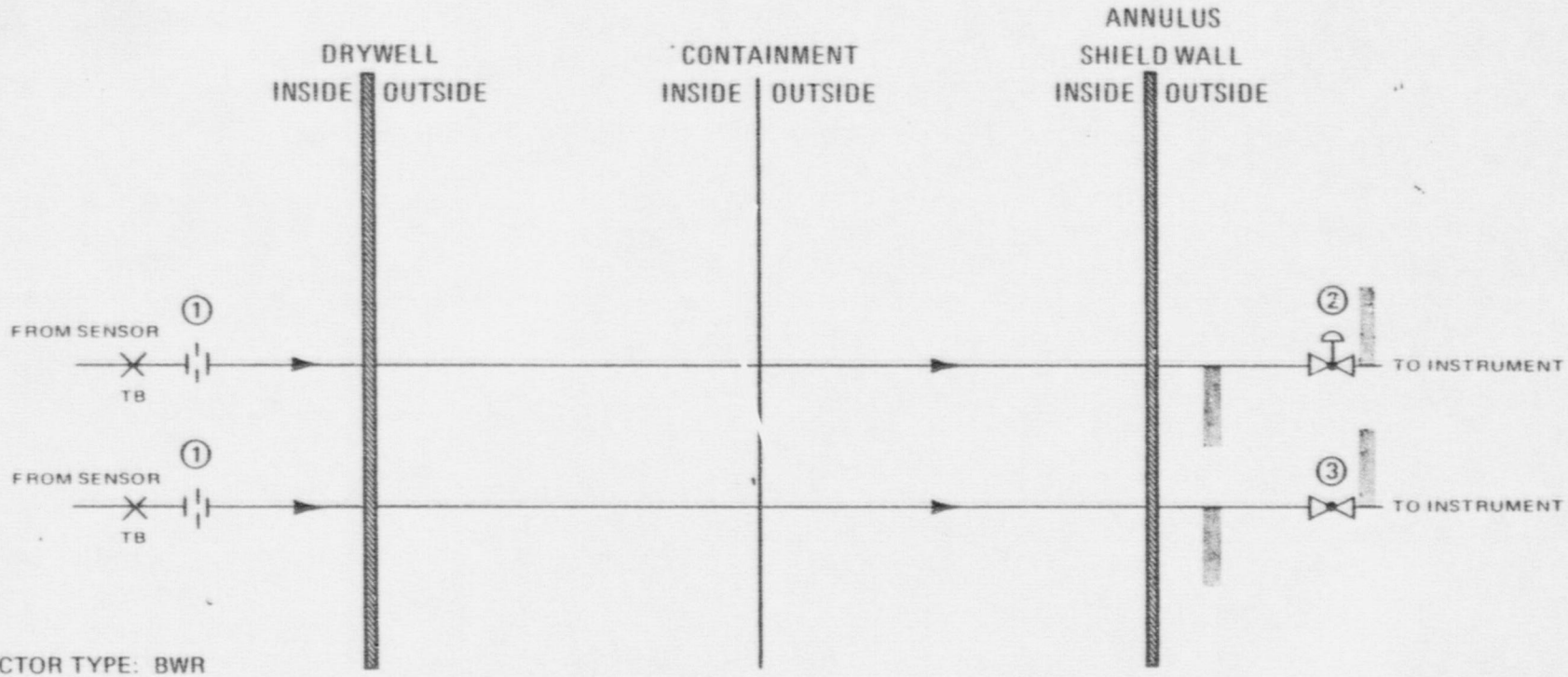


Figure A-10

REACTOR TYPE: BWR

	VALVE DESIGNATION	NRC DESIGN CRITERIA	VALVE TYPE	ACTUATION: PRIMARY MODE	ACTUATION: SECONDARY MODE	VALVE POSITION: NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST LOCA	VALVE POSITION: POWER FAILURE	ISOLATION SIGNAL	LINE SIZE (inches)	CLOSURE TIME (seconds)	ENGINEERED SAFETY FEATURE	SAFETY CLASS	REMARKS
1	56	¾" ORIFICE	—	—	—	—	—	—	—	1	—	NO	2		
2	56	GLOBE	REMOTE MANUAL	—	OPEN	OPEN	CLOSED	CLOSED	—	1	—	NO	2		
3	56	GLOBE	MANUAL	—	OPEN	OPEN	OPEN	—		1	—	YES	2		

LEGEND	
	New Change

TYPICAL FUEL TRANSFER SYSTEM

Fuel Transfer Line

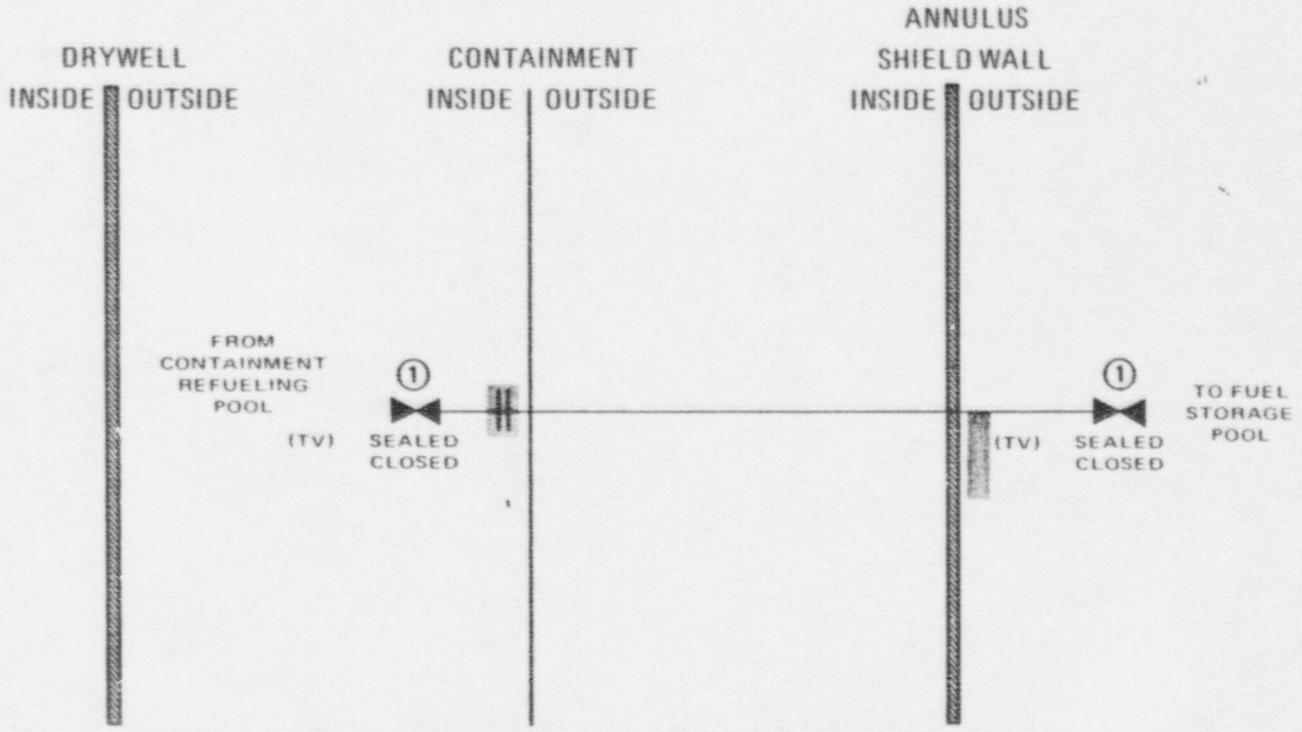


Figure A-11

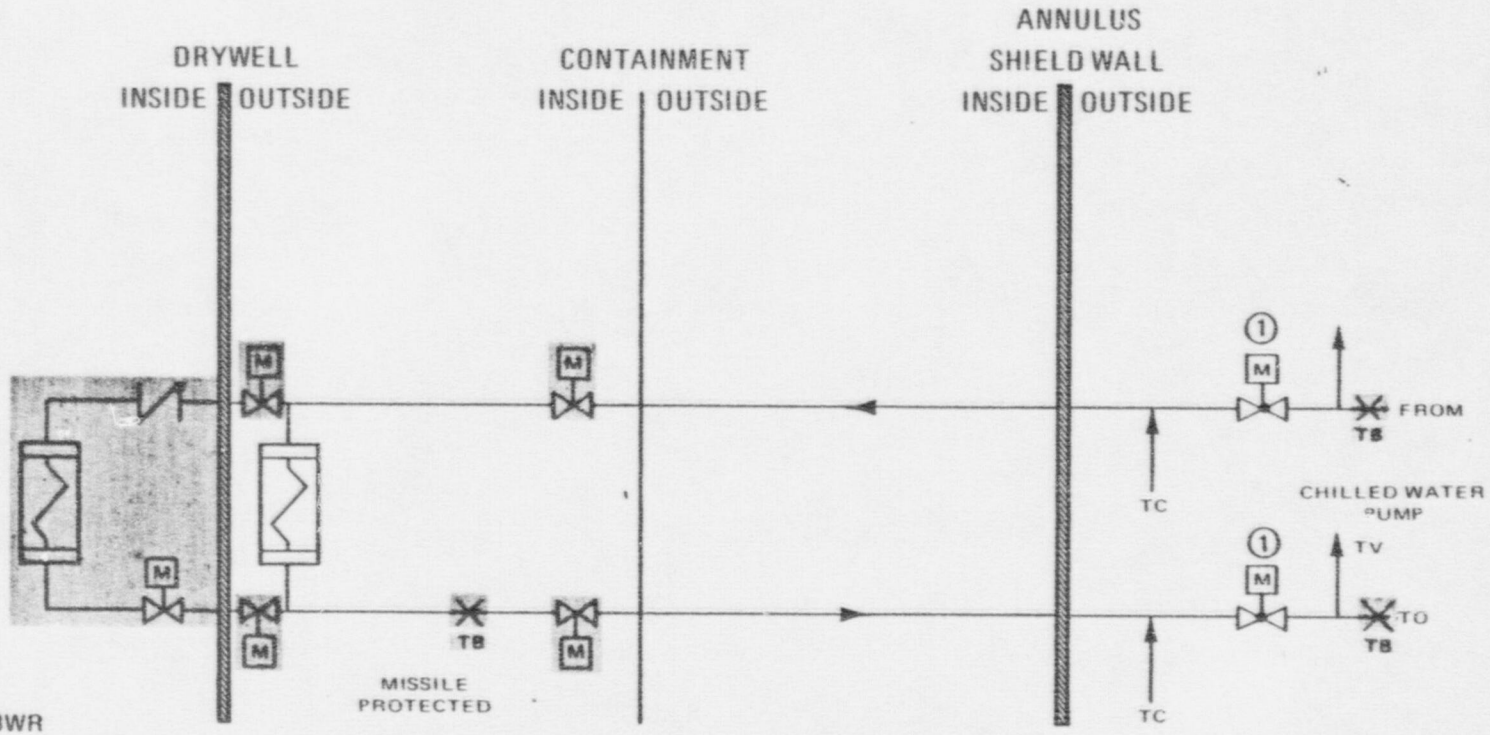
REACTOR TYPE: BWR

VALVE DESIGNATION	NRC DESIGN CRITERIA	VALVE TYPE	ACTUATION: PRIMARY MODE	ACTUATION: SECONDARY MODE	VALVE POSITION: NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST LOCA	VALVE POSITION: POWER FAILURE	ISOLATION SIGNAL	LINE SIZE (inches)	CLOSURE TIME (seconds)	ENGINEERED SAFETY FEATURE	SAFETY CLASS	REMARKS
1	56	GATE	MANUAL	—	CLOSED	CLOSED	CLOSED	—	—	36	—	NO	2	VALVE IS MOMENTARILY OPENED DURING REFUELING MODE

LEGEND	
	New Change

TYPICAL CLOSED LOOP WATER SYSTEM

Effluent And Influent Lines



REACTOR TYPE: BWR

VALVE DESIGNATION	NRC DESIGN CRITERIA	VALVE TYPE	ACTUATION: PRIMARY MODE	ACTUATION: SECONDARY MODE	VALVE POSITION: NORMAL	VALVE POSITION: SHUTDOWN	VALVE POSITION: POST LOCA	VALVE POSITION: POWER FAILURE	ISOLATION SIGNAL	LINE SIZE (inches)	CLOSURE TIME (seconds)	ENGINEERED SAFETY FEATURE	SAFETY CLASS	REMARKS
1	57	GLOBE	AUTOMATIC	REMOTE MANUAL	OPEN	OPEN	CLOSED	AS IS	B. L	4	20	NO	2	

LEGEND	
	New Change

Figure A-12

AMERICAN NUCLEAR SOCIETY
NUCLEAR FUEL CYCLE DIVISION

Headquarters:
244 East Ogden Avenue
Hinsdale, Illinois 60521

WHD 157-78

June 30, 1978

Reply to:
W. H. D'Ardenne
General Electric Company
175 Curtner Avenue
San Jose, California
M/C 682

J. F. Mallay
Babock & Wilcox
P. O. Box 1260
Lynchburg, VA 24505

Dear Jim:

The American Nuclear Society Standard ANS 56.2, "Containment Isolation Provisions for Fluid Systems", was reviewed.

The review of the ANS 56.2 identified 41 changes, which should be made to the Standard to bring it up to date. These revisions are described on the accompanying ANSI Comment Forms and referenced Figures. Please initiate a revision of the Standard to incorporate these changes.

Yours truly,

W. H. D'Ardenne
Member ANS-50

WHD:lw/1535

cc: J. O. Schuyler w/o att.
R. E. Basso " "
P. B. Stephens " "
G. W. Morrow " "
R. T. Reich " "

BE SURE TO PROVIDE THE JUSTIFICATION FOR YOUR REVISED REWORDING.

STANDARDS - COMMENTS & RESOLUTIONS

PROCESS: 1. Commenter Initiate Form
2. Responder Complete Form
3. For Distribution see Procedure

STANDARD(TITLE)	ANSI NO. N	VERSION	WORK GROUP NO.

COMMENTER(NAME)	PHONE	RESPONDER(NAME)	PHONE

ADDRESS:	ADDRESS:

INDEX NO.			REVISED WORDING,COMMENTS, RECOMMENDATIONS/JUSTIFICATION (REQUIRED)	AC ✓*	RESOLUTIONS
NO	PG	SEC. PARA			
1		Foreword	R, Add "and Footnotes" between "Appendices" and "are" and "and		
			guidance respectively" between "standard," and "but".		
			J, The Footnotes also provide guidance similar to the Appendices,		
			but are not mandatory or part of the standard. Qualified reviewers		
			have interpreted the Footnotes to be part of the Standard. To		
			avoid this problem the exclusion statement is recommended.		

POOR ORIGINAL

Please provide justification for each change proposed on this ANSI form. Committee acceptance requires justification

*Check only if comment is accepted.

PBS:at/74

ANSI NO. N	SH. OF

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STANDARDS - COMMENTS & RESOLUTIONS

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COMMENTER(NAME)	PHONE	RESPONDER(NAME)		PHONE
ADDRESS:		ADDRESS:		

INDEX NO.			REVISED WORDING/COMMENTS, RECOMMENDATIONS/JUSTIFICATION (REQUIRED)	AC ✓*	RESOLUTIONS
NO	PG	SEC. PARA			
1	1	1.0	R, Change "would" to "shall" in last sentence of 2nd paragraph.		
			J, "shall" is the correct word for use in the standard, to state		
			a requirement.		

*Check only if comment is accepted. PBS:at/75

ANSI NO. N | SH. OF

POOR ORIGINAL

on this ANSI form. Committee acceptance requires justification.

BE SURE TO PROVIDE THE JUSTIFICATION FOR YOUR REVISED REWORDING.

STANDARDS - COMMENTS & RESOLUTIONS

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COMMENTER(NAME)	PHONE	RESPONDER(NAME)		PHONE
ADDRESS:		ADDRESS:		

INDEX NO. NO	PG	SEC. PARA	REVISED WORDING COMMENTS, RECOMMENDATIONS/JUSTIFICATION (REQUIRED)	AC ✓*	RESOLUTIONS
3	1	1.0	R. Eliminate "engineered safety feature related systems" and		
			replace with "non safety systems which can be used to mitigate		
			accidents".		
	8	3.6.3	ditto		
	9	3.6.7	ditto		
	10	4.43	ditto		
	11	4.4.7	ditto		
	13	4.12	ditto		
	2	2.0	R, Eliminate the definition "engineered safety feature related		
			systems.		
			J, "engineered safety feature related systems is not an ANS-50		
			approved term. "engineered safety feature related systems" have		
			been confused with "engineered safety features" by qualified		
			reviewers. The confusion is exhibited in Section 3.6.3 where the		
			standard says "engineered safety feature related systems such as		

POOR ORIGINAL

Committee acceptance requires justification on this ANSI form.

*Check only if comment is accepted.

PBS:at/76

(cont.)

BE SURE TO PROVIDE THE JUSTIFICATION FOR YOUR REVISED REWORDING.

STANDARDS - COMMENTS & RESOLUTIONS

PROCESS: 1. Commenter Initiate Form
2. Responder Complete Form
3. For Distribution see Procedure

STANDARD(TITLE)	ANSI NO. N	VERSION	WORK GROUP NO.

COMMENTER(NAME)	PHONE	RESPONDER(NAME)	PHONE

ADDRESS:	ADDRESS:

INDEX NO. NO	PG	SEC. PARA	REVISED WORDING COMMENTS, RECOMMENDATIONS/JUSTIFICATION (REQUIRED)	AC ✓*	RESOLUTIONS
3	2	2.0 (Cont.)			
			emergency core cooling systems". The emergency core cooling		
			system is unquestionably an engineered safety feature and not		
			an engineered safety feature related system.		

POOR ORIGINAL

on this ANSI form. Committee acceptance requires justification.

*Check only if comment is accepted. PBS:at/77

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STANDARDS - COMMENTS & RESOLUTIONS

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NO	PG	SEC. PARA			
4	1	1.0	R, Eliminate the 3rd paragraph.		
			J, The paragraph does not provide specific criteria. The use of		
			the words "may" and "many" provides essentially no direction.		

POOR ORIGINAL

on this ANSI form. Committee acceptance requires justification.

*Check only if comment is accepted. PBS:at/78

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STANDARDS - COMMENTS & RESOLUTIONS

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NO	PG	SEC. PARA			
5	1	1.	R, Change "escape" to "release".		
			J, "release" is 1) a more commonly used term 2) more representative		
			of the phenomena. "escape" implies an uncontrollable event.		

POOR ORIGINAL

on this ANSI form. Committee acceptance requires justification.

*Check only if comment is accepted. PBS:at/79

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NO	PG	SEC. PARA			
6	1	2.0	R, Revise "accident isolation" definition to "isolation".		
			Establishment of barrier(s) in a fluid system or group of fluid		
			systems to minimize fluid transfer.		
			J, Isolation is established with or without accidents, therefore		
			the modifier "accident" is inappropriate, unnecessary, and con-		
			fusing. Isolation is not unique to accidents, e.g., isolation		
			can be required after a turbine trip.		

POOR ORIGINAL

Committee acceptance requires justification on this ANSI form.

*Check only if comment is accepted. PBS:at/80

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STANDARDS - COMMENTS & RESOLUTIONS

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NO	PG	SEC. PARA			
7	1	2.0	R, Revise "accident isolation signal" definition to "isolation		
			signal. A signal which automatically initiates isolation." and		
			relocate.		
			J, Isolation signals cause isolation with or without accidents,		
			therefore the modifier "accident" is an incorrect, unnecessary,		
			and confusing. Isolation signals are not unique to accidents.		
			Isolation signals are received and isolation occurs. They are		
			not screened to determine which ones are accident isolation		
			signals and which ones are not accident isolation signals.		
			Isolation signal is a generally used and understood term. "Accident		
			isolation signals" is not part of the vernacular.		

POOR ORIGINAL

on this ANSI form. Committee acceptance requires justification.

*Check only if comment is accepted.

PBS:at/81

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STANDARDS - COMMENTS & RESOLUTIONS

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8	1	2.0	R, Change 2nd and 3rd sentences of active failure definition to		
	&		read "Examples of active failures include the failure or a pump,		
	2		fan, or diesel generator to start. Spurious action of a powered		
			safety component originating within its automatic actuation system		
			shall be regarded as an active failure unless design features		
			or operating restrictions preclude such spurious action." Add		
			"Where the proper function of a component can be demonstrated		
			despite any reasonable postulated condition, then that function		
			of a component shall be considered especially qualified for the		
			service, and shall be treated as a passive failure rather than an		
			active failure. Examples of such component functions may include		
			opening of code safety valves, and opening of very low failure		
			rate swing check valves. Where such exemptions are taken, an		
			approved basis for the exemption shall be documented."		
			J, The revised wording is consistent with the revised wording		

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on this ANSI form. Committee acceptance requires justification.

*Check only if comment is accepted.

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8	1&2	2.0 (Cont.)			
			of active failure definition contained in the Single Failure		
			Criteria Standard for LWR's which has been revised by its Work		
			Group. The inclusion of low failure rate valves is no longer		
			mentioned in the active failure definition. Spurious action of		
			a powered safety component originating in its automatic actuation		
			system is considered credible, but spurious actions of safety		
			components which are initiated by manual actions are considered		
			incredible during an accident short term.		

POOR ORIGINAL

Please provide the justification for the suggested revision on this ANSI form. Committee acceptance requires justification.

*Check only if comment is accepted. PBS:at/83

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STANDARDS - COMMENTS & RESOLUTIONS

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NO	PG	SEC. PARA			
9	2	2.0	R, Eliminate the definition "containment isolation".		
			J, Within the context of the Standard a definition for isolation		
			is sufficient.		

Please provide your reworking and justification on this ANSI form. Committee acceptance requires justification. PAGE 2

POOR ORIGINAL

*Check only if comment is accepted. PBS:at/84

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STANDARDS - COMMENTS & RESOLUTIONS

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NO	PG	SEC. PARA			
10	2	2.0	R, Eliminate the definition "containment isolation signal".		
			J, Isolation signal is a term defined earlier, i.e., a modification		
			of the accident isolation signal definition. Defining both an		
			accident isolation signal and a containment isolation signal does		
			not provide additional clarification but tries to differentiate		
			items which are not different, and are one and the same signal.		

Please provide your justification on this ANSI form. Committee acceptance requires justification.

POOR ORIGINAL

*Check only if comment is accepted. PBS:at/85

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STANDARDS - COMMENTS & RESOLUTIONS

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NO	PG	SEC. PARA			
11	3	2.0	R, Add "an operating basis" between "and" and "earthquake" in the		
			definition of "normal natural phenomena".		
			J, Earthquake is not sufficiently specific. An operating basis		
			earthquake is usually considered to be a "condition which may		
			reasonably be expected to occur during a few plant life times",		
			accordingly the adjectives "an operating basis" should be added.		

*Check only if comment is accepted.

PBS:at/86

AN N NO. SH. OF

Committee acceptance requires justification on this ANSI form.

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STANDARDS - COMMEN[illegible]JTIONS

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NO	PG	SEC. PARA			
12	3	2.0	R, Add "or an item with a very low failure rate, e.g., a Code relief valve" to the lst s ntence of the definition of a passive component.		
			J, The NRC has approved the principle that passive components can be components which have mechanical movement if adequate data is available to substantiate a very low failure rate, e.g., a failure rate similar tc a Code pipe failure rate, therefore the additional phrase is necessary for consistency between the NRC practice and the industry standard.		

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*Check only if comment is accepted. PBS:at/87

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STANDARDS - COMMENTS & RESOLUTIONS

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NO	PG	SEC. PARA			
13	3	2.0	R, Add "remote manually" between "be" and "closed" in the definition of "positive acting check valve".		
			J, Within the scope of the standard it should be clear to the reader that the check valve can be closed remotely and manually, i.e., from the control room. Without these clarification words the full requirements of a positive acting check valve are not provided to the reader.		

POOR ORIGINAL

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*Check only if comment is accepted. PBS:at/88

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STANDARDS - COMMENTS & RESOLUTIONS

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14	3	2.0	R, Eliminate "Guidance...form[3]" from the definition of "safety class" and add "and American National Standard Nuclear Safety Criteria for the Design of Stationary Boiling Water Reactors, N521-1978 for BWRs [3]. Also (a) eliminate Footnote 3, and renumber the remaining Footnotes.		
			J, The BWR Standard "Safety Criteria for the Design of Stationary Boiling Water Reactors" was approved by ANSI in February 1978, contains a safety classification system and should be included in the text, and not as a footnote.		

POOR ORIGINAL

Please provide your rewording and justification on this ANSI form. Committee acceptance requires justification.

*Check only if comment is accepted.

BE SURE TO PROVIDE THE JUSTIFICATION FOR YOUR REVISED REWORDING.

STANDARDS - COMMENTS & RESOLUTIONS

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NO	PG	SEC. PARA			
15	3	2.0	R, Change the sealed closed isolation valve definition to read as follows: "sealed closed isolation valve. A valve that is in a closed position by administrative controls by any of the following methods: (1) a mechanical device sealing or locking the valve in the closed position. (2) a normally closed valve with a seal[3] or lock on any manual override if present. (3) a seal or lock on the power breaker or power source in a manner that prevents power from being supplied to the valve. J, items (2) and (3) are different methods each as significant as item (1).		

POOR ORIGINAL

on this ANSI form. Committee acceptance requires justification.

*Check only if comment is accepted. PBS:at/90

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STANDARDS - COMMENTS & RESOLUTIONS

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16	4	Footnote 5	R. Change superscript to "4" from ":".		
			J, Footnote 3 was eliminated.		

POOR ORIGINAL

on this ANSI form. Committee acceptance requires justification.

*Check only if comment is accepted. PBS:at/92

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STANDARDS - COMMENTS & RESOLUTIONS

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1	4	2.0	R, In the definition of severe natural phenomena add "a safe shutdown" ahead of earthquake.		
			J, Earthquake is not sufficiently specific. A safe shutdown earthquake is usually considered as a "condition postulated as the most severe that can be reasonably derived from the history and properties of the site and surroundings.", accordingly the adjectives "a safe shutdown" should be added.		

POOR ORIGINAL

On this ANSI form, Committee acceptance requires justification.

*Check only if comment is accepted. PBS:at/91

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STANDARDS - COMMENTS & RESOLUTIONS

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NO	PG	SEC. PARA			
18	4	3.1	R, Eliminate "Guidance for BWRs has been formulated and exists in		
			draft form[3]" and add ", and American National Standard Nuclear		
			Safety Criteria for the Design of Stationary Boiling Water Reactor		
			Plants, ANS 52.1-1978.		
			J, Amplification of design criteria and additional guidance is		
			contained in the American National Standard Nuclear Safety		
			Criteria for the Design of Stationary Boiling Water Reactor Plants		
			ANS 52.1-1978 which has received final approval from ANSI.		

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PBS:at/93

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STANDARDS - COMMENTS & RESOLUTIONS

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NO	PG	SEC. PARA			
19	4	Footnote	R, Change superscript "6" to "5".		
		6	Change NRC Regulatory Guides issued dates to		
			"September 1977" for RG 1.7		
			"January 1977" for RG 1.33		
			J, The latest version of the Regulatory Guide should be suggested		
			for guidance, i.e., the dates provided.		

POOR ORIGINAL

*Check only if comment is accepted. PBS:at/94

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STANDARDS - COMMENTS & RESOLUTIONS

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NO	PG	SEC. PARA			
20	7	3.5	R, Revise as follows:		
			3.5 Criteria for Closed Systems Inside Containment. If a closed		
			system inside containment is used as one of the two containment		
			isolation barriers, it shall:		
			(1) Not communicate with either the primary coolant or the		
			containment atmosphere		
			(2) Be missile, pipe whip, and jet force protected from a loss-		
			of-coolant accident or from a missile, pipe whip, or jet		
			force that results in a requirement for containment isolation.		
			(3) Meet Safety Class 2 design requirements.		
			(4) Withstand temperature equal to containment design temperature.		
			(5) Withstand external pressure from containment structural		
			integrity test		
			(6) Withstand loss-of-coolant accident transients and environment		
			(7) Meet Seismic Category I design requirements		
			(Cont.)		

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*Check only if comment is accepted. PBS:at/95

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STANDARDS - COMMENTS & RESOLUTIONS

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20	7	3.5 (Cont.)			
			(8) Be protected against overpressure from thermal expansion		
			when isolated, if required.		
			If these criteria cannot be fully met, then General Design		
			Criteria 56 shall be met.		
			J, The previous wording was confusing to some reviewers and the		
			revised wording is intended to eliminate the disorder of the		
			original wording.		

POOR ORIGINAL

*Check only if comment is accepted.

PBS:at/96

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STANDARDS - COMMENTS & RESOLUTIONS

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NO	PG	SEC. PARA			
21	8	3.6.3	R, Eliminate "(see 4.12)".		
			J, There is no Section 4.12 in the Standard.		

POOR ORIGINAL

*Check only if comment is accepted. PBS:at/97

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STANDARDS - COMMENTS & RESOLUTIONS

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22	8	3.6.1	R, Change "guidelines" to "criteria" in the 2nd sentence of the paragraph.		
			J, "Guidelines" implies guidance, i.e., advice, not requirements. "Criteria" means rules, standards or requirements. Standards are developed, not to provide advice, but requirements or "criteria".		

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*Check only if comment is accepted.

PBS:at/98

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NO	PG	SEC. PARA			
23	8	3.6.3	R, Change "emergency core cooling system" to "feedwater system".		
			J, A feedwater system is an example of a non safety system which		
			can be used to mitigate accidents. An emergency core cooling		
			system is not.		

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*Check only if comment is accepted. PBS:at/99

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NO	PG	SEC. PARA			
24	8	3.6.3	R, Add "or positive acting check valve" between "valve" and		
			"instead".		
			J, A positive acting check valve is as acceptable as a remote		
			manual valve and should be so identified.		

POOR ORIGINAL

*Check only if comment is accepted. PBS:at/100

Comments on this ANSI form. Committee acceptance requires justification.

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STANDARDS - COMMENTS & RESOLUTIONS

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25	9	4.1	R, Eliminate "Appendices A and B of this Standard present		
			illustrative diagrams of systems which penetrate the containment.		
			These diagrams show containment isolation provisions which		
			illustrate the requirements of this Standard."		
			J, Discussion of the Appendices has led qualified individuals		
			to interpret the Appendices to be more important than intended,		
			i.e., as requirements. Elimination of the discussion of the		
			Appendices in the body of the standard is recommended.		

Please provide your rationale, including the basis on this ANSI form. Committee acceptance requires justification.

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STANDARDS - COMMENTS & RESOLUTIONS

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NO	PG	SEC. PARA			
76	9	4.3	R, Eliminate "valves in those lines that must be dard" in the last		
	10		sentence and add "American National Standard Nuclear Safety		
			Criteria for the Design of Stationary Boiling Water Reactor Plants,		
			ANS 52.1-1978 [3] between "and" and "American" in the last sentence.		
			J, The sentence does not make sense with the current "wording".		
			The ANSI Standard Safety Criteria for the Design of Stationary		
			Boiling Water Reactor Plants, ANS 52.1-1978 has received final		
			approval by ANSI and contains criteria for Protection System Design		
			similar to N18.2-1973, therefore it should be in the text of the		
			Standard.		

POOR ORIGINAL

*Check only if comment is accepted. PBS:at/102

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NO	PG	SEC. PARA			
21	10	4.4.4	R, Revise the last sentence in the 2nd paragraph to read "All valves including those larger than 12 inches in diameter shall close within one minute or less and within the time limits determined by an accident radiation dose calculation which shall be performed to show that the actual closure time does not result in an offsite dose greater than permitted by 10CFR100."		
			J, All closing time should satisfy 10CFR100.		

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*Check only if comment is accepted. PBS:at/103

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28	10	4.4.5	R, Add "valves in those lines that must be" between "isolation"		
			and "isolated".		
			J, The proposed wording is necessary to describe what the isola-		
			tion signal initates. Without the added words the sentence is		
			unclear.		

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*Check only if comment is accepted. PBS:at/104

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A	11	4.4.10	R, Add "and American National Standard ANS 52.1-1978 (formerly		
			N212) [3].		
			J, The ANSI Standard Safety Criteria for the Design of Stationary		
			Boiling Water Reactor Plants, N 521-1978 has received final		
			approval by ANSI and contains Safety Classification Criteria.		

PAGE 2

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30	11	Footnote	R, Change "(ANS 8.2), Draft 3, June 1974" to "(ANS 58.2),		
		12	January 1978"		
			J, The Standard has a new designation and the latest draft is		
			dated January 1978.		

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*Check only if comment is accepted. PBS:at/106

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3)	11	Footnote	R, Change "Flood Design Criteria" to "Water Borne Load Design		
		14	Criteria". Eliminate "(Draft 1)". Change "1973" to "1977".		
			J, The Standard title has changed, a draft is no longer identified		
			by number and the latest draft is dated 1977.		

PAGE 2

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*Check only if comment is accepted. PBS:at/107

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32	12	Footnote	R, Eliminate Footnote 16, and renumber other Footnotes accordingly		
		16			
			J, Calls to ANSI and ANS and checking of records lead to the		
			conclusion this draft standard no longer exists in a traceable		
			form.		

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*Check only if comment is accepted. PBS:at/108

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ADDRESS:	ADDRESS:

INDEX NO.			REVISED WORDING COMMENTS, RECOMMENDATIONS/JUSTIFICATION (REQUIRED)	AC ✓*	RESOLUTIONS
NO	PG	SEC. PARA			
33	12	Footnote	R, Change Draft date to "August 1977" from "September 1973".		
		17			
			J, ANSI records state the latest Draft date is August 1977.		

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ADDRESS:	ADDRESS:

INDEX NO. NO	PG	SEC. PARA	REVISED WORDING COMMENTS, RECOMMENDATIONS/JUSTIFICATION (REQUIRED)	AC ✓*	RESOLUTIONS
04		Footnote	R, Eliminate Footnote 21, and renumber other Footnotes accordingly.		
		21			
			J, Calls to ANSI and ANS and checking of records, lead to the		
			conclusion this draft standard no longer exists in a traceable		
			form.		

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INDEX NO. NO	PG	SEC. PARA	REVISED WORDING COMMENTS, RECOMMENDATIONS/JUSTIFICATION (REQUIRED)	AC ✓*	RESOLUTIONS
35	13	Footnote	R, Change Footnote 24 to read "[24] Trial Use Guide for Type Tests		
		24	of Class 1 Electrical Valve Operators for Nuclear Power Generating		
			Stations - March 1972".		
			J, According to ANSI records the Standard cited above replaces		
			the Standard in the original Footnote.		

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*Check only if comment is accepted. PBS:at/111

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INDEX NO. NO	PG	SEC. PARA	REVISED WORDING, COMMENTS, RECOMMENDATIONS/JUSTIFICATION (REQUIRED)	AC ✓*	RESOLUTIONS
36	17	Footnote	R, Reword Footnote 32 to read "Bypassed when bypass switch in		
		32	Bypass position".		
			J, The modification given in the rewording above represents the		
			current Bypass Criteria. The other two bypass criteria in the		
			1976 version are no longer employed in the BWR 6.		

Please provide your rewording and justification on this ANSI form. Committee acceptance requires justification.

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*Check only if comment is accepted. PBS:at/112

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INDEX NO. NO	PG	SEC. PARA	REVISED WORDING COMMENTS, RECOMMENDATIONS/JUSTIFICATION (REQUIRED)	AC ✓*	RESOLUTIONS
37	15	References	R, Add a reference "[3] American National Standard Nuclear Safety		
			Criteria for Design of Stationary Boiling Water Reactors, ANS 52.1-		
			1978 (formerly N212) American Nuclear Society, LaGrange Park,		
			Illinois", revise the reference numbers, and correct the American		
			Nuclear Society address in the other references, 2, 11, and 12.		
			J, ANS 52.1-1978 has received final ANSI approval and provided		
			valuable criteria similar to N18.2-1973, N18.2a-1975.		

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*Check only if comment is accepted. PBS:at/113

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ADDRESS:		ADDRESS:		

INDEX NO.			REVISED WORDING COMMENTS, RECOMMENDATIONS/JUSTIFICATION (REQUIRED)	AC ✓*	RESOLUTIONS
NO	PG	SEC. PARA			
38	17	A2	R, Eliminate "K Turbine Building High Temperature" and add "P Reactor High Pressure".		
			J, The K signal is no longer used, but a P signal is now used for BWR isolation valve closure.		

POOR ORIGINAL

on this ANSI form. Committee acceptance requires justification.

*Check only if comment is accepted. PBS:at/114

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ADDRESS:	ADDRESS:

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NO	PG	SEC. PARA			
	20	Figure	R, Replace Figure A-1 with new Figure A-1 provided with these		
35		A-1	comments.		
			J, The Figure in the 1976 version of the Standard is not repre-		
			sentative of the current approved BWR design. The new Figure		
			represents the current approved BWR design.		

POOR ORIGINAL

Committee acceptance requires justification on this ANSI form.

*Check only if comment is accepted. PBS:at/115

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INDEX NO.			REVISED WORDING COMMENTS, RECOMMENDATIONS/JUSTIFICATION (REQUIRED)	AC ✓*	RESOLUTIONS
NO	PG	SEC. PARA			
40	21	Figure	R, Eliminate Figure A-2.		
		A-2			
			J, The arrangement shown is not currently used in the BWR.		

POOR ORIGINAL

on this ANSI form. Committee acceptance requires justification.

*Check only if comment is accepted. PBS:at/116

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ADDRESS:	ADDRESS:

INDEX NO. NO	PG	SEC. PARA	REVISED WORDING COMMENTS, RECOMMENDATIONS/JUSTIFICATION (REQUIRED)	AC ✓*	RESOLUTIONS
41	22	Figures	R, Replace Figures A-3 through A-13 with new Figure A-2 through		
	to	A-3	A-12 provided with these comments.		
	32	through			
		A-13			
			J, The Figures in the 1976 version of the Standard are not		
			representative of the current approved BWR design. The new		
			Figures represent the current approved BWR design.		

Please provide your rewording and justification on this ANSI form. Committee acceptance requires justification.

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