Westinghouse
Electric Corporation

Water Reactor
Divisions

Box 355
Pittsburgh Pennsylvania 15230-0355

July 15, 1985

AW-85-040

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20055

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: Transmittal of Westinghouse Documents Requested by the U.S. NRC at the South Texas Mechanical Engineering Branch Document Audit on May 17, 1985, and June 26, 1985

References: (1) Westinghouse Letter No. NS-NRC-85-3038, Rahe to Denton, dated May 30, 1985.

(2) Westinghouse Letter No. NS-NRC-85-3044, Rahe to Denton, dated July 3, 1985.

Dear Mr. Denton:

The application for withholding is submitted by Westinghouse Electric Corporation ("Westinghouse") pursuant to the provisions of paragraph (b)(1) of Section 2.790 of the Commission's regulations. It contains commercial strategic information proprietary to Westinghouse and customarily held in confidence.

The affidavit previously provided to justify withholding proprietary information in this matter was submitted as AW-80-53 with letter CAW-82-62 dated October 20, 1982, and is equally applicable to this material.

Accordingly, it is respectfully requested that the subject information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10CFR Section 2.790 of the Commission's regulations.

Correspondence with respect to this application for withholding or the accompanying affidavit should reference AW-85-040 and should be addressed to the undersigned.

Very truly yours,

WESTINGHOUSE ELECTRIC CORPORATION

R. A. Wiesemann, Manager
Regulatory & Legislative Affairs

/wh

Enclosure

cc: E. C. Shomaker, Esq.
Office of the Executive Legal Director, NRC

AW-85-040

July 15, 1985

bcc:

E. P. Rahe, Jr., MNC 4-12
R. G. Saint-Paul, Brussels
J. Cobian, Madrid
J. M. Moore, PC 3 600
P. J. Docherty, Bethesda

AW-80-53

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF ALLEGHENY:

Before me, the undersigned authority, personally appeared Robert A. Wiesemann, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Corporation ("Westinghouse") and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:

Robert A. Wiesemann

Robert A. Wiesemann, Manager
Regulatory and Legislative Affairs

Sworn to and subscribed
before me this 5 day
of September 1980.

Notary Public

(1) I am Manager of Regulatory and Legislative Affairs in the Nuclear Technology Division of Westinghouse Electric Corporation, and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing or rulemaking proceedings, and am authorized to apply for its withholding on behalf of the Westinghouse Water Reactor Divisions.

(2) I am making this Affidavit in conformance with the provisions of 10CFR Section 2.790 of the Commission's regulations and in conjunction with the Westinghouse application for withholding accompanying this Affidavit.

(3) I have personal knowledge of the criteria and procedures utilized by Westinghouse Nuclear Energy Systems in designating information as a trade secret, privileged or as confidential commercial or financial information.

(4) Pursuant to the provisions of paragraph (b)(4) of Section 2.790 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.

(i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.

(ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in

confidence. The application of that system and the substance of that system constitutes Westinghouse policy and provides the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

(a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

(b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.

(c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.

(d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.

(e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.

(f) It contains patentable ideas, for which patent protection may be desirable.

(g) It is not the property of Westinghouse, but must be treated as proprietary by Westinghouse according to agreements with the owner.

There are sound policy reasons behind the Westinghouse system which include the following:

(a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.

(b) It is information which is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.

(c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.

(d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.

(e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition in those countries.

(f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.

(iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10CFR Section 2.790, it is to be received in confidence by the Commission.

(iv) The information sought to be protected is not available in public sources to the best of our knowledge and belief.

(v) The proprietary information sought to be withheld in this submittal is that which is appropriately marked SE-SP-40(80) "Southern California Edison Repair Report" (Proprietary). This report has been prepared for and is being submitted to the Staff at the request of Southern California Edison. The report details the design of the sleeves that are to be installed in the San Onofre Unit 1 steam generators. The report also includes the design analysis, the test verification program and descriptions of the expanded mechanical plug, the rolled plug and the channel head decontamination process.

This information is part of that which will enable Westinghouse to:

(a) Apply for patent protection.

(b) Optimize steam generator repair techniques to extend the service life of steam generators.

(c) Assist its customers to obtain NRC approval.

(d) Justify the design basis for the steam generator repairs and installation methods.

Further, this information has substantial commercial value as follows:

(a) Westinghouse plans to sell the repair techniques and equipment described in part by the information.

(b) Westinghouse can sell repair services based upon the experience gained and the installation equipment and methods developed.

Public disclosure of this information is likely to cause substantial harm to the competitive position of Westinghouse because (1) it would result in the loss of valuable patent rights, and (2) it would enhance the ability of competitors to design, manufacture, verify and sell steam generator repair techniques for commercial power reactors without commensurate expenses.

The development of the methods and equipment described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar engineering programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended for steam generator repair techniques.

Further the deponent sayeth not.

EQUIPMENT SPECIFICATION COVER SHEET
WESTINGHOUSE FORM 54064D

WESTINGHOUSE ELECTRIC CORPORATION
Nuclear Energy Systems
P.O. Box 355
Pittsburgh, Pennsylvania 15230

EQUIPMENT SPECIFICATION	DATED	REVISION NO	DATED	ORIGINAL ISSUE	SUPERSEDES PREVIOUS REVISIONS
G-952342	2/15/74	2	9/2/75	☐	X

PROJECT GENERAL

EQUIPMENT REACTOR COOLANT PUMP MODEL 100 60 HERTZ
" " 50 "

SHOP ORDER 125

SYSTEM 3817 MWT PLANT

This document complies with

Paragraph NA 3250 of the

ASME Boiler and Pressure

Vessel Code, Section III

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
DAVID RAY COLLIER
NO. 22500-E

David R. Collier P.E.

3/15/76 Date

ASME CODE CLASS SEE TABLE IV
ASME CODE CLASS SEE TABLE IV

ATTACHMENTS

WPS 595698
WPS 597755-2
WPS 83860 LA
WPS 84201 MW
WPS 597754

NOTE: Comments from the following groups have been received & resolved:

Fluid Systems Engr.
Quality Engr.
Materials Engrg.
Electrical Control Systems
Systems Structural Analy.
Support Structure Design
Cntrl. & Protection Anal.
Standard Plants PCWG
Functional Analysis I

FOR SUPPLIER'S CONVENIENCE

REV. NO.	REVISION ENTERED BY & DATE

APPROVALS

	ORIGINAL ISSUE	REV. 1	REV. 2	REV. 3	REV. 4	REV. 5	REV. 6
AUTHOR	R. A. Worthen	X	David R. Collier 3-15-76				
SHOP ORDER HOLDER	D. H. Field	X	3/15/76				
MANAGER, Equipment	A. L. Dietrick	X	3-15-76				
PROJECT MANAGER		X					

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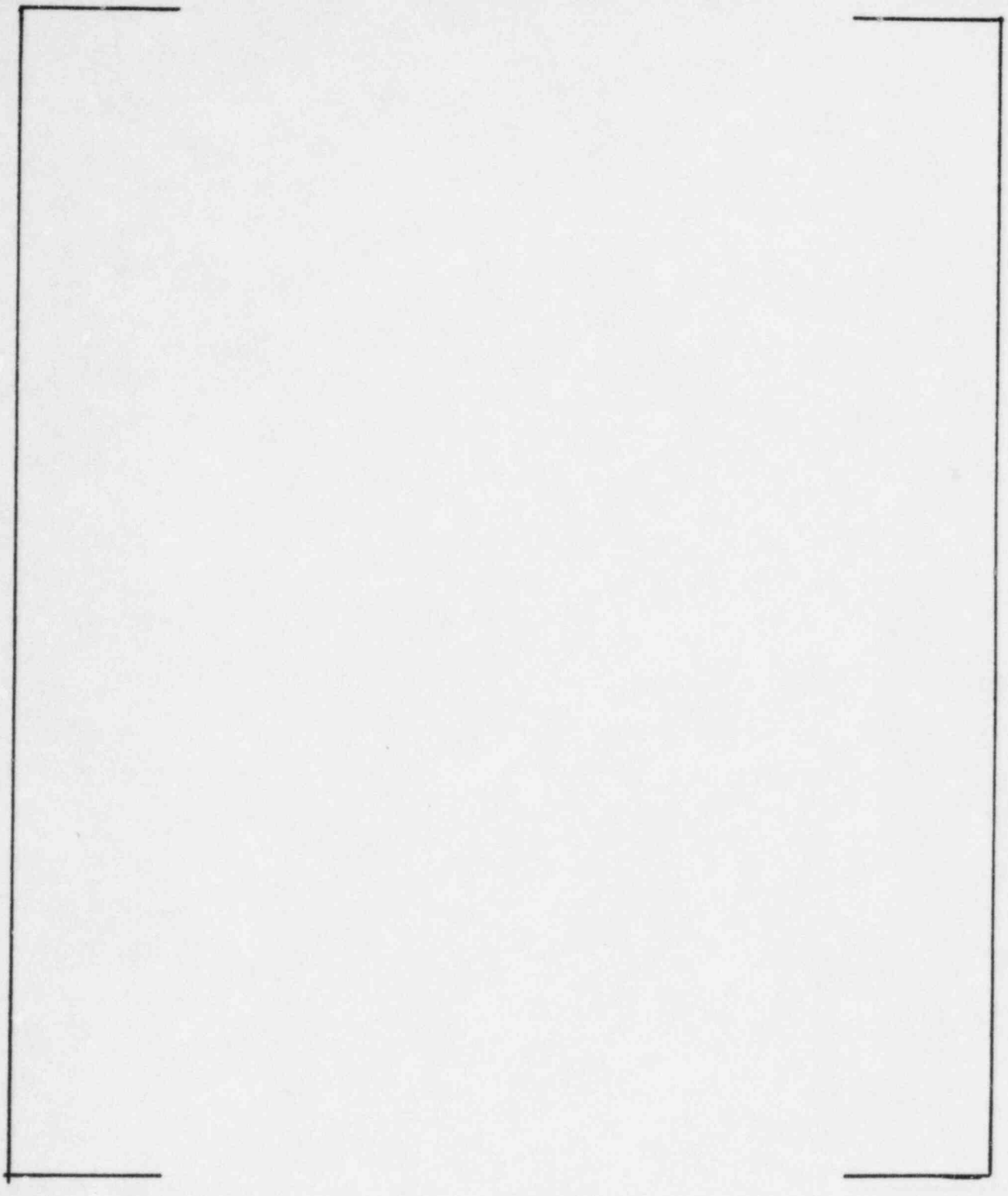

(a,c)

UIPMENT SPECIFICATION COVER SHEET
TINGHOUSE FORM 54064D

WESTINGHOUSE ELECTRIC CORPORATION
Nuclear Energy Systems
P.O. Box 355
Pittsburgh, Pennsylvania 15230

PORATION
15

IPMENT SPECIFICATION	DATED	REVISION NO	DATED	ORIGINAL ISSUE	SUPERSEDES PREVIOUS REVISION
952721	10/22/74	4	4/24/78	☐	X

JECT SOUTH TEXAS

IPMENT REACTOR COOLANT PUMP

P ORDER TGX/THX-125

TEM 3817 MWT PLANT (4XLR)

is document complies with the
ovisions of the Design Specification
ction of the ASME Boiler and Pressure
ssel Code Section III.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
EDWARD W. RUPPEN, JR.
No. 13228-E

Edward W Ruppen Jr 8/1/78
P.E. Date

ATTACHMENT:

G-952342, Rev. 2
Interim Rev. 1 to
G-952342, Rev. 2
Interim Rev. 2 to
G-952342, Rev. 2

The following Departments have reviewed this revision of this E-Spec.

Product Assurance
NSSS Systems Application
Systems Structural Analysis

FOR SUPPLIER'S CONVENIENCE

REV NO	REVISION ENTERED BY & DATE

APPROVALS

	ORIGINAL ISSUE	REV. 1	REV. 2	REV. 3	REV. 4	REV. 5	REV. 6
THOR	R. A. Worthen	DRC	FS	FS	MFH 4-7-78		
OP ORDER LDER	R. A. Worthen	DRC	EWR	EWR	EWR 4/7/78		
NAGER,	A. L. Dietrick	JAK	EJR	EJR	DRC 4/7/78		
OJECT NAGER	G. L. Hohmann	GLH	GLH	GLH	GLH 4/5/78		

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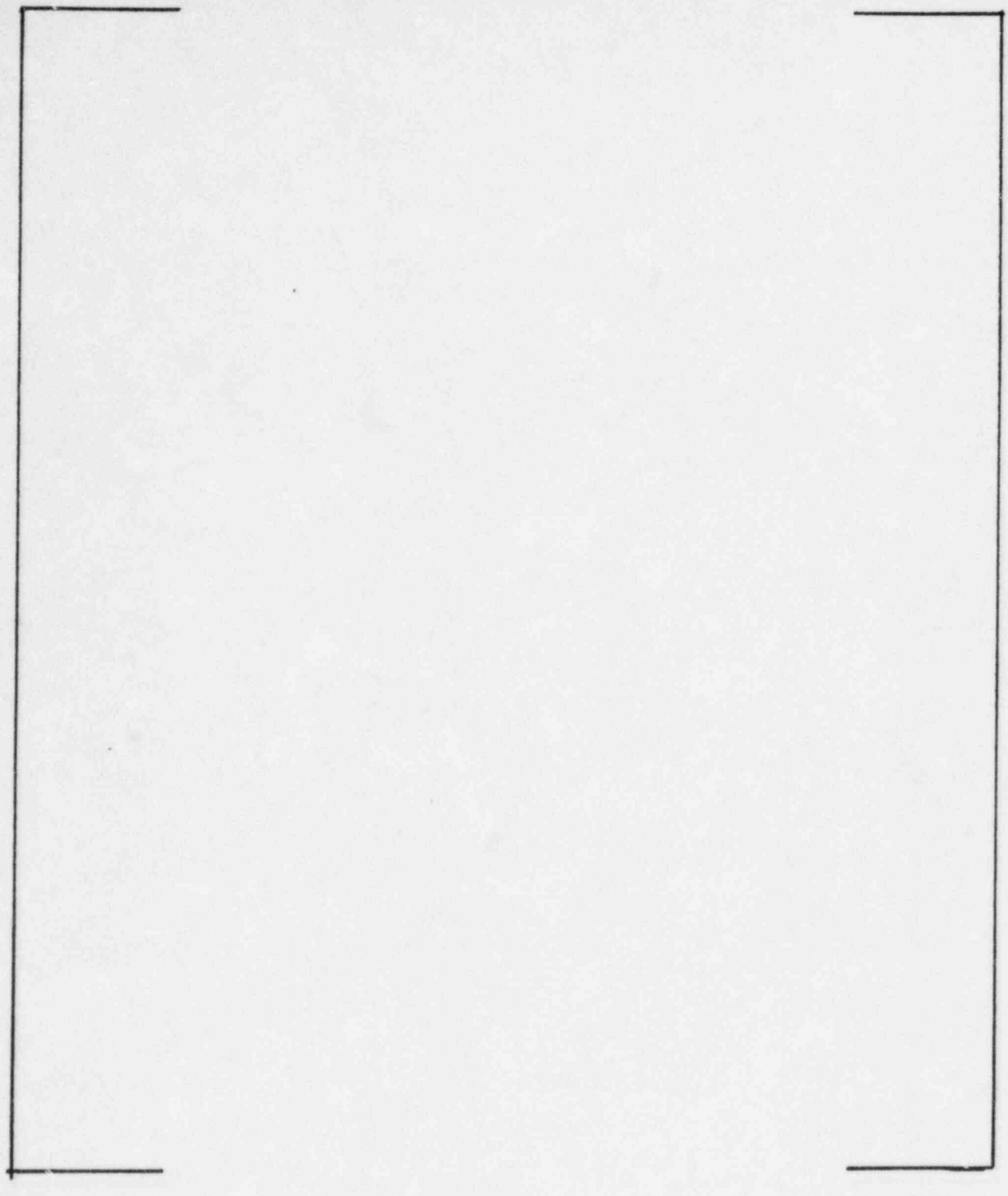


(a,c)

EQUIPMENT SPECIFICATION COVER SHEET
WESTINGHOUSE FORM 54064D

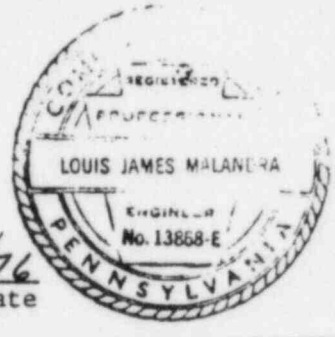
WESTINGHOUSE ELECTRIC CORPORATION
Nuclear Energy Systems
P.O. Box 355
Pittsburgh, Pennsylvania 15230

EQUIPMENT SPECIFICATION	DATED	REVISION NO	DATED	ORIGINAL ISSUE	SUPERSEDES PREVIOUS REVISIONS
G-952850	2/25/76	0		X	☐

EQUIPMENT MOTOR OPERATED GATE VALVES
ASME BOILER & PRESSURE VESSEL CODE
SECTION III
CLASS 1, 2 AND 3

SHOP ORDER 220

This document complies with
Paragraph NA3250 of the
ASME Boiler and Pressure
Vessel Code, Section III



Louis J Malandra 3/1/76
P.E. Date

APPROVALS

	ORIGINAL ISSUE	REV. 1	REV. 2	REV 3	REV. 4	REV. 5	REV. 6
AUTHOR	T. E. Auble (M)						
SHOP ORDER HOLDER	T. P. Leonard 3-1-76						
MANAGER, Hyd. Eq.	J. A. George 3/2/76						

pc

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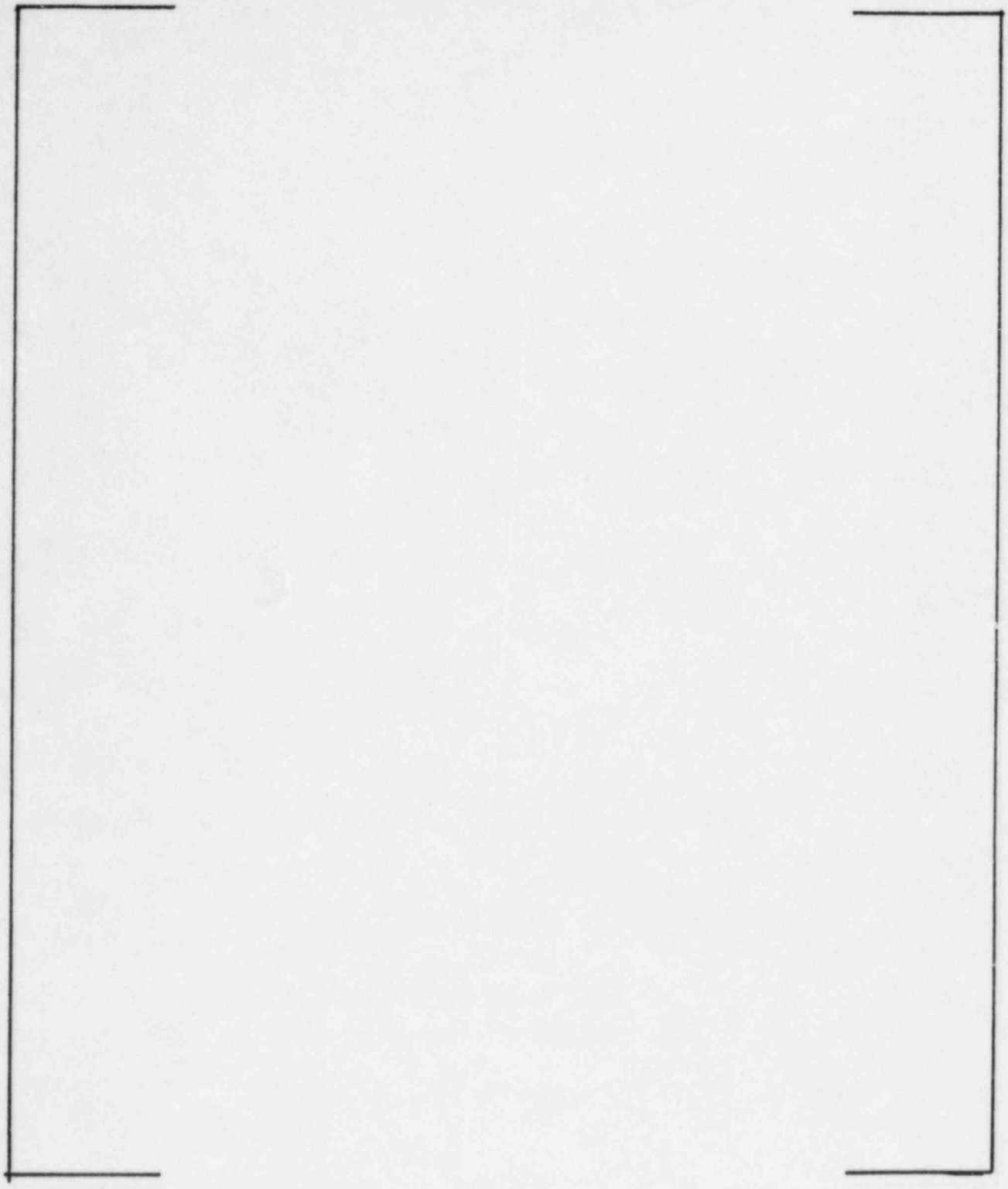


(a,c)

DESIGN SPECIFICATION SHEET
WESTINGHOUSE FORM 54064G

WESTINGHOUSE ELECTRIC CORPORATION
Nuclear Energy Systems
P.O. Box 355
Pittsburgh, Pennsylvania 15230

DESIGN SPECIFICATION	DATED	REVISION NO	DATED	ORIGINAL ISSUE	SUPERSEDES PREVIOUS REVISIONS
952874	4/5/76	4	1/16/85	☐	☒

PROJECT: South Texas Project
Units Number 1 and 2

EQUIPMENT: Motor Operated Gate Valves
ASME Boiler and Pressure Vessel Code
Section III

SHOP ORDER: TGX-220
THX-220

SYSTEM:

ATTACHMENTS

This document complies with
Paragraph NCA-3250 of the
ASME Boiler and Pressure
Vessel Code, Section III.

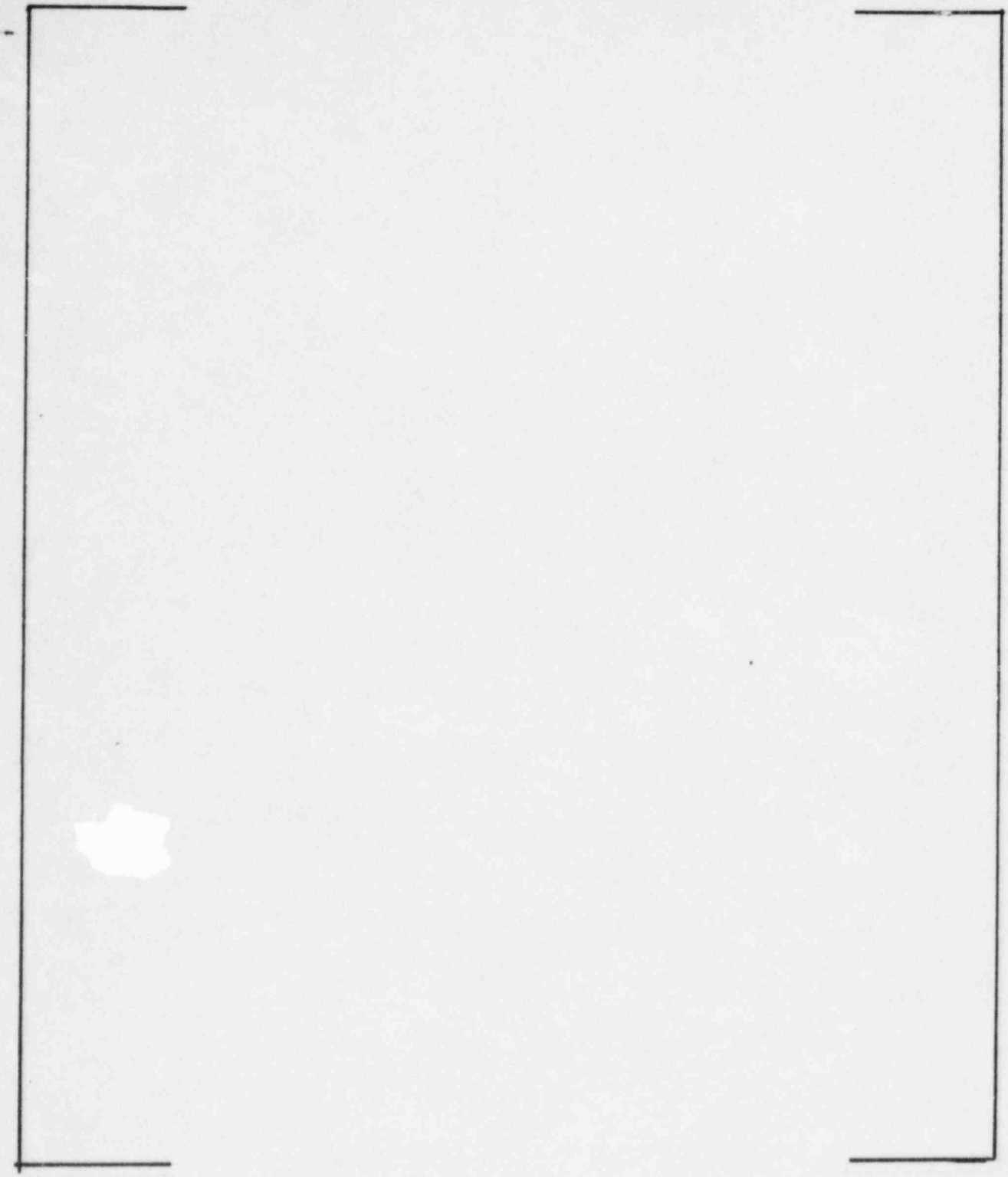
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
L. IKE EZEKOYE
No. 18379-E

L. Ike Ezekoye P.E. Feb 22, 1985 Date

ck/59705

APPROVALS

	ORIGINAL ISSUE	REV. 1	REV. 2	REV. 3	REV. 4	REV. 5	REV. 6
AUTHOR	C. W. Hirst				A.D. Hurwitz 1/17/85		
SHOP ORDER HOLDER	H. P. Leonard				[illegible] 1/17/85		
MANAGER	J. A. George				[illegible] 1/17/85		
PRODUCT ASSURANCE	J. W. Mock				for Parillo 1/17/85		
PROJECT MANAGER	S. H. Kale				[illegible] INTERIM 3/6/85		
	F. J. Orehowsky				[illegible] 2/26/85		
	W. G. Poulson				DK Swanberg 3/6/85		



(a,c)

EQUIPMENT SPECIFICATION COVER SHEET
WESTINGHOUSE FORM 54064C

WESTINGHOUSE ELECTRIC CORPORATION
Nuclear Energy Systems
P.O. Box 355
Pittsburgh, Pennsylvania 15230

EQUIPMENT SPECIFICATION	DATED	REVISION NO.	DATED	ORIGINAL ISSUE	SUPERSEDES PREVIOUS REVISIONS
953385	10/20/78	0		X	☐

PROJECT: TGX/THX

EQUIPMENT: Piping Design Specification, ASME III Code Class 1, for Houston Lighting & Power Company - SOUTH TEXAS PROJECT Nuclear Power Plant Units 1 and 2

SHOP ORDER: 137

SYSTEM: RCS

This document is correct and complete and is in compliance with the requirements of Subsubarticle NA-3250 of ASME Section III

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
KENNETH R. BALKEY
25011-E

Kenneth R. Balkey P.E. 10/20/78
Date

ATTACHMENTS

None

NOTE: Comments from the following groups have been received and resolved:

Quality Assurance
Primary Equipment Systems Application
Reactor Vessels & Piping
Mechanical Design
Reactor Coolant and Auxiliary Pumps
Process & Control Board Group
Auxiliary Equipment
Radiation & Environmental Systems
Chemistry Operations
Advanced Fluid Systems Design
Structural Technology

FOR SUPPLIER'S CONVENIENCE

REV. NO.	REVISION ENTERED BY & DATE

APPROVALS

	ORIGINAL ISSUE	REV. 1	REV. 2	REV. 3	REV. 4
AUTHOR	K. R. Balkey K. R. Balkey 10/20/78				
SHOP ORDER HOLDER	K. R. Balkey K. R. Balkey 10/20/78				
MANAGER, Sys. Struc. Analysis	R. W. Brandon R W Brandon 10/20/78				
PROJECT MANAGER	G. L. Hohmann G.L.H. 10/20/78				

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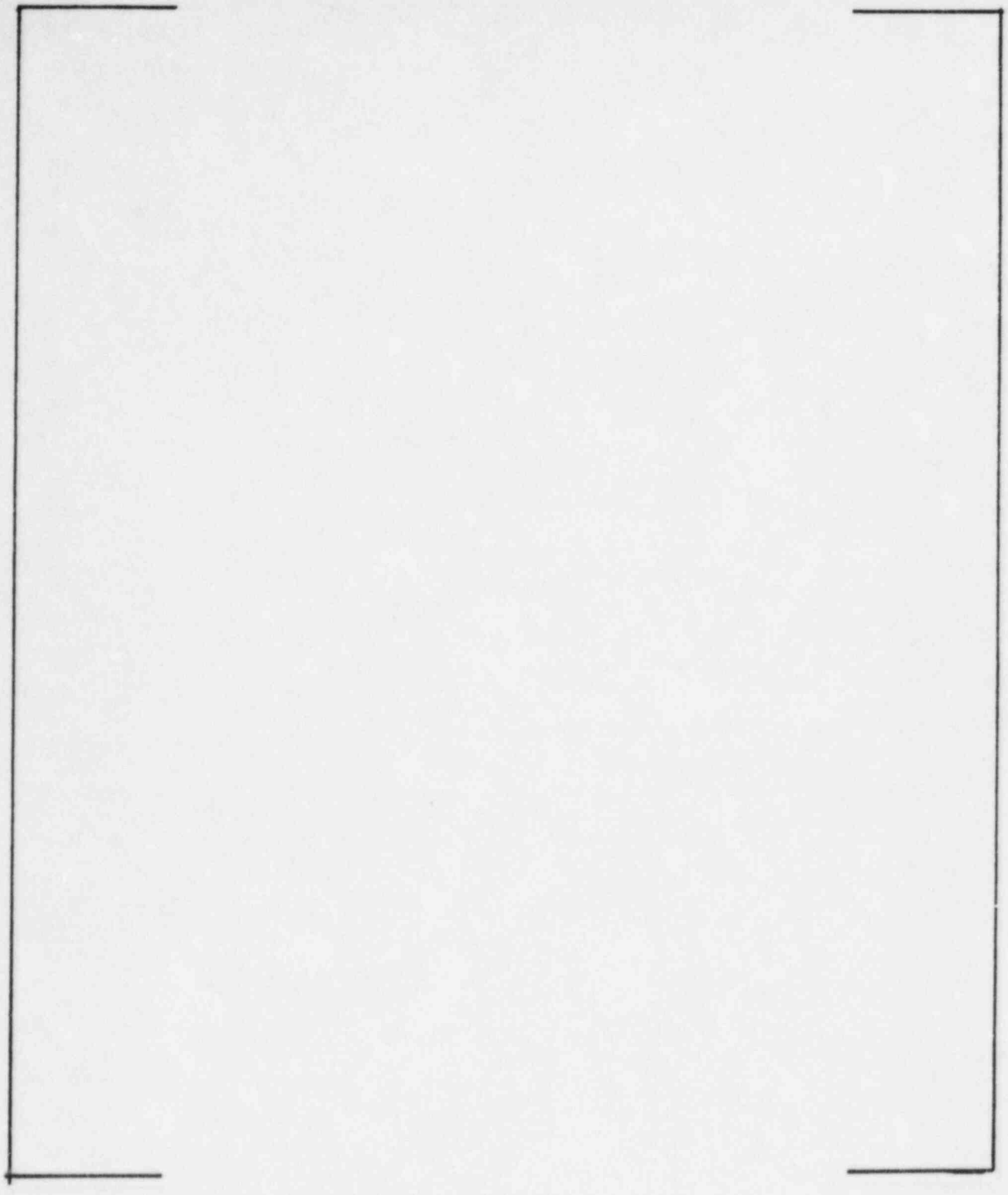


(a,c)

DESIGN SPECIFICATION SHEET
WESTINGHOUSE FORM 54064G

WESTINGHOUSE ELECTRIC CORPORATION
Nuclear Energy Systems
P.O. Box 355
Pittsburgh, Pennsylvania 15230

DESIGN SPECIFICATION	DATED	REVISION NO.	DATED	ORIGINAL ISSUE	Modifies PREVIOUS REVISION
953385	10/20/78	1	1/31/85	☐	☒

PROJECT: TGX/THX

EQUIPMENT: Piping Design Specification, ASME III Code Class 1, for Houston Lighting & Power Company - SOUTH TEXAS PROJECT Nuclear Power Plant Units 1 and 2

SHOP ORDER: TGX/THX-137

SYSTEM: RCS, PSARV, Pressurizer Surge Line and RDT-Bypass Manifold

ATTACHMENTS

Plant Specific
Class 1 Piping Design
Specification 953385
Rev. 0

This document is correct and complete and in compliance with the requirements of Subarticle NCA-3250 of the ASME Code, Section III.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
ALOIS J. BAUMGARTNER
30914-E

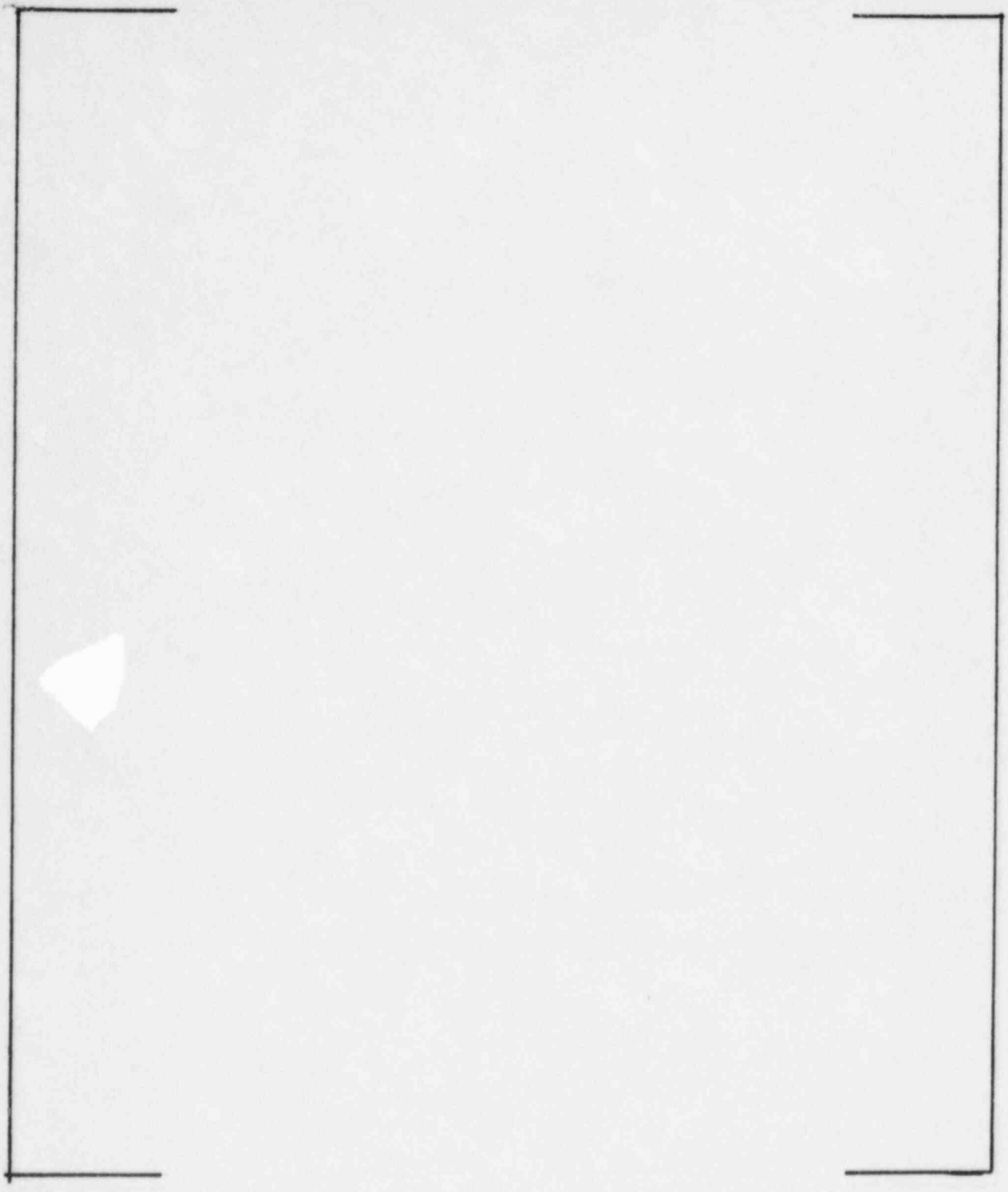
Alois J. Baumgartner P. E. 2/15/85 Date

Comments from the following areas have been received and resolved:

Quality Assurance
Equipment Engineering
Valve Engineering,
RC and SG Fluid Sys. Des.
Nuclear Safety/Licensing

APPROVALS

	ORIGINAL ISSUE	REV. 1	REV. 2	REV. 3	REV. 4	REV. 5	REV. 6
AUTHOR	A. J. Baumgartner A.J. Baumgartner 2/15/85	A.J.B. 2-15-85					
SHOP ORDER HOLDER	E. R. Johnson E.R. Johnson 2/15/85	ERJ 2-15-85					
MANAGER	E. R. Johnson E.R. Johnson 2/15/85	ERJ 2-15-85					
PRODUCT ASSURANCE	F. B. Davis F.B. Davis 2-15-85	FBD 2-15-85					
PROJECT MANAGER	F. J. Twogood F.J. Twogood 2-15-85	R.V. Anderson 2/15/85					



(a,c)

EQUIPMENT SPECIFICATION COVER SHEET
WESTINGHOUSE FORM 54064C

WESTINGHOUSE ELECTRIC CORPORATION
Nuclear Energy Systems
P.O. Box 355
Pittsburgh, Pennsylvania 15230

EQUIPMENT SPECIFICATION	DATED	REVISION NO.	DATED	ORIGINAL ISSUE	SUPERSEDES PREVIOUS REVISIONS
G-952744	9/8/78	0		[X]	[ ]

PROJECT: General

EQUIPMENT: Reactor Coolant System Equipment Supports Design Specification, ASME III Code Class 1 (for Steam Generator, Reactor Coolant Pump, Reactor Pressure Vessel, and Pressurizer)

SHOP ORDER: 137

SYSTEM:

ATTACHMENTS

None

NOTE: Comments from the following groups have been received and resolved:
Quality Assurance
Primary Equipment
Reactor Vessels and Piping
Metallurgical and NDE Analysis
Mechanical Design
Reactor Coolant and Auxiliary Pumps
Radiation and Environmental Systems

This document is correct and complete and in compliance with the requirements of Subsubarticle NA-3250 of ASME Section III.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
KENNETH R. BALKEY
ENGINEER
25011-E

Kenneth R. Balkey P.E. 9/8/78 DATE

FOR SUPPLIER'S CONVENIENCE

REV. NO.	REVISION ENTERED BY & DATE

APPROVALS

	ORIGINAL ISSUE	REV. 1	REV. 2	REV. 3	REV. 4
AUTHOR	9/8/78 D. W. Alexander/B. F. Maurer				
SHOP ORDER HOLDER	K. R. Balkey K. R. Balkey 9/8/78				
MANAGER, Sys. Struc. Anal.	R. W. Brandon R. W. Brandon 9/8/78				
PROJECT MANAGER					

5.0 MANUFACTURING REQUIREMENTS

5.1 Fabrication

5.1.1 Welding
5.1.2 Heat Treatment
5.1.3 Flame Cutting

5.2 Cleaning
5.3 Marking
5.4 Tolerances

6.0 QUALITY ASSURANCE

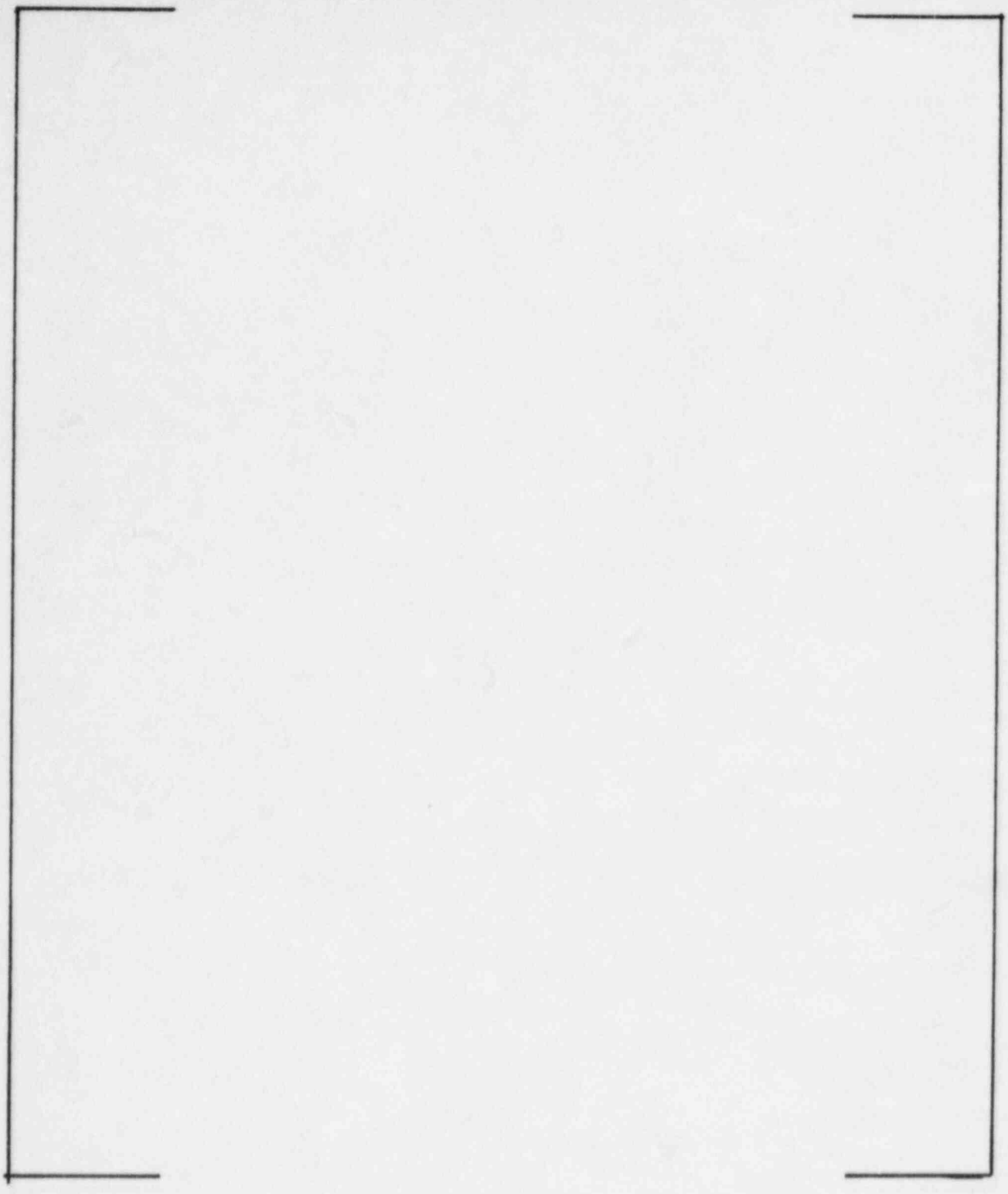
6.1 Quality Control Requirements
6.2 Nondestructive Test Requirements
6.3 NDE Personnel Qualifications
6.4 Documentation

7.0 PREPARATION FOR SHIPMENT

7.1 Protective Coating

7.1.1 Cleaning
7.1.2 Painted Surfaces
7.1.3 Unpainted Surfaces

7.2 Packaging



(a,c)

EQUIPMENT SPECIFICATION COVER SHEET
WESTINGHOUSE FORM 5406I4C

WESTINGHOUSE ELECTRIC CORPORATION
Nuclear Energy Systems
P.O. Box 355
Pittsburgh, Pennsylvania 15230

EQUIPMENT SPECIFICATION	DATED	REVISION NO.	DATED	ORIGINAL ISSUE	SUPERSEDES PREVIOUS REVISIONS
953533	3/2/79	0		X	☐

PROJECT: South Texas Project Units 1&2

EQUIPMENT: Reactor Coolant System Equipment Supports Design Specification, ASME III Code Class 1 (for Steam Generator, Reactor Coolant Pump, Reactor Pressure Vessel and Pressurizer)

SHOP ORDER: TGX/THX-137

SYSTEM: RCS

This document is correct and complete and in compliance with the requirements of Subsubarticle NA-3250 of ASME Section III

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
KENNETH R. BALKEY
25011-E

Kenneth R. Balkey P.E. — 3/2/79 Date

ATTACHMENTS

G-952744, Rev. 0

NOTE: Comments from the following groups have been received and resolved:

Quality Assurance Primary Equipment
Reactor Vessels and Piping
Metallurgical and NDE Analysis
Design Engineering
Reactor Coolant and Auxiliary Pumps
Radiation and Systems Analysis

FOR SUPPLIER'S CONVENIENCE

REV. NO.	REVISION ENTERED BY & DATE

APPROVALS

	ORIGINAL ISSUE	REV. 1	REV. 2	REV. 3	REV. 4
AUTHOR	B. F. Maurer BF Maurer 3/2/79				
SHOP ORDER HOLDER	K. R. Balkey K.R Balkey 3/2/79				
MANAGER, Plant Struct. Engineering	F. Loceff F Loceff 3 Mar 79				
PROJECT MANAGER	A. T. Parker A.T. Parker 3/2/79				

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EQUIPMENT SPECIFICATION COVER SHEET
WESTINGHOUSE FORM 54064C

WESTINGHOUSE ELECTRIC CORPORATION
Nuclear Energy Systems
P.O. Box 355
Pittsburgh, Pennsylvania 15230

EQUIPMENT SPECIFICATION	DATED	REVISION NO.	DATED	ORIGINAL ISSUE	SUPERSEDES PREVIOUS REVISIONS
G-952628	6/19/74	1	1/8/75	☐	X

PROJECT:

EQUIPMENT: FABRICATION REQUIREMENTS FOR THE REACTOR COOLANT SYSTEM COMPONENT SUPPORTS

SHOP ORDER: GENERAL 957

SYSTEM:

ATTACHMENTS

W QCS-1 Rev. 6
W PS 597755
W PS 595137
W PS 292722
W PS 85310QA
W Admin. Spec. W 54823
Note: Comments from the following groups have bee received and resolved:

U.S. Projects
Planning & Scheduling
Product Assurance
Quality Engineering
Purchases & Traffic
Buyer, Services & Develop:
Nuclear Safety
Mech. & Fluid Systems Eval
Mechanics & Materials Tech
Systems Structural Analysi
Materials & Process Eng.
Support Structure Design

FOR SUPPLIER'S CONVENIENCE

REV. NO.	REVISION ENTERED BY & DATE

APPROVALS

	ORIGINAL ISSUE	REV. 1 (M)	REV. 2	REV. 3	REV. 4
AUTHOR	S. A. Palm S.A. Palm	S.A. Palm 1-8-75			
SHOP ORDER HOLDER	T. E. Campbell T.E. Campbell	TEC 1-8-75			
MANAGER, Support Struct. Design	T. E. Campbell T.E. Campbell	TEC 1-8-75			
PROJECT MANAGER					

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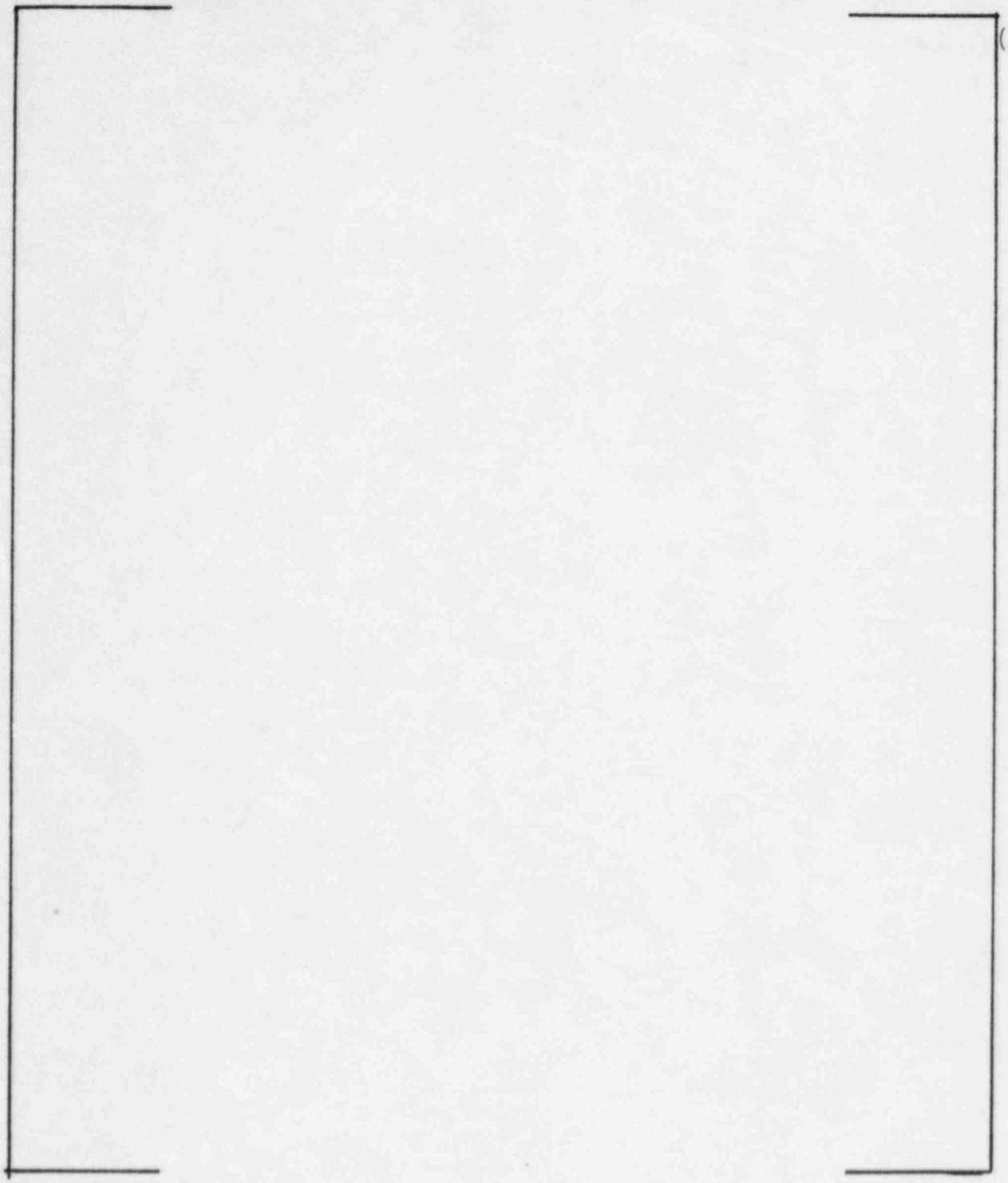

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WESTINGHOUSE FORM 55132

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1.3, Appendix A	5/77	0		☒	☐

ATTACHMENTS

TITLE FLUID SYSTEMS DESIGN TRANSIENTS
3XL AND 4XL (South Texas) PLANTS

WESTINGHOUSE ELECTRIC CORPORATION
Nuclear Energy Systems
P.O. Box 355
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APPROVAL

		ORIGINAL ISSUE	REV 1	REV 2
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APPENDIX A

to SSDC 1.3, Revision 2

FLUID SYSTEMS DESIGN TRANSIENTS

3XL AND 4XL PLANTS

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PART A
INTRODUCTION

This appendix provides fluid systems design transients information applicable to the 3XL and 4XL model plants. It is intended for use with the basic transient document, SSDC 1.3,* and contains material which supplements, corrects, replaces or otherwise modifies information contained in SSDC 1.3.

The need for this additional transients information is pointed up by several basic differences between the 3XL and 4XL plants and the 312 and 412 models addressed in SSDC 1.3, Rev. 2. These include:

1) Higher power levels
2) "E" model steam generators instead of "D"
3) Three train Safety Injection System
4) Separate Emergency Boration System
5) 250 gpm letdown system (CVCS)
6) "Steam Bubble" heatup and cooldown.

It should be noted that there are many portions of SSDC 1.3 Rev. 2 considered directly applicable to 3XL, 4XL design work without modification. The transients described by these portions contain sufficient but not excessive conservatism; this conclusion is based on experience gained from the application of SSDC 1.3 Rev. 2 to numerous component design and fatigue evaluation processes. Unless indicated by information presented here in Appendix A (or in some other valid document), it should be assumed that the design transients in SSDC 1.3 Rev. 2 are applicable to 3XL and 4XL plants without change.

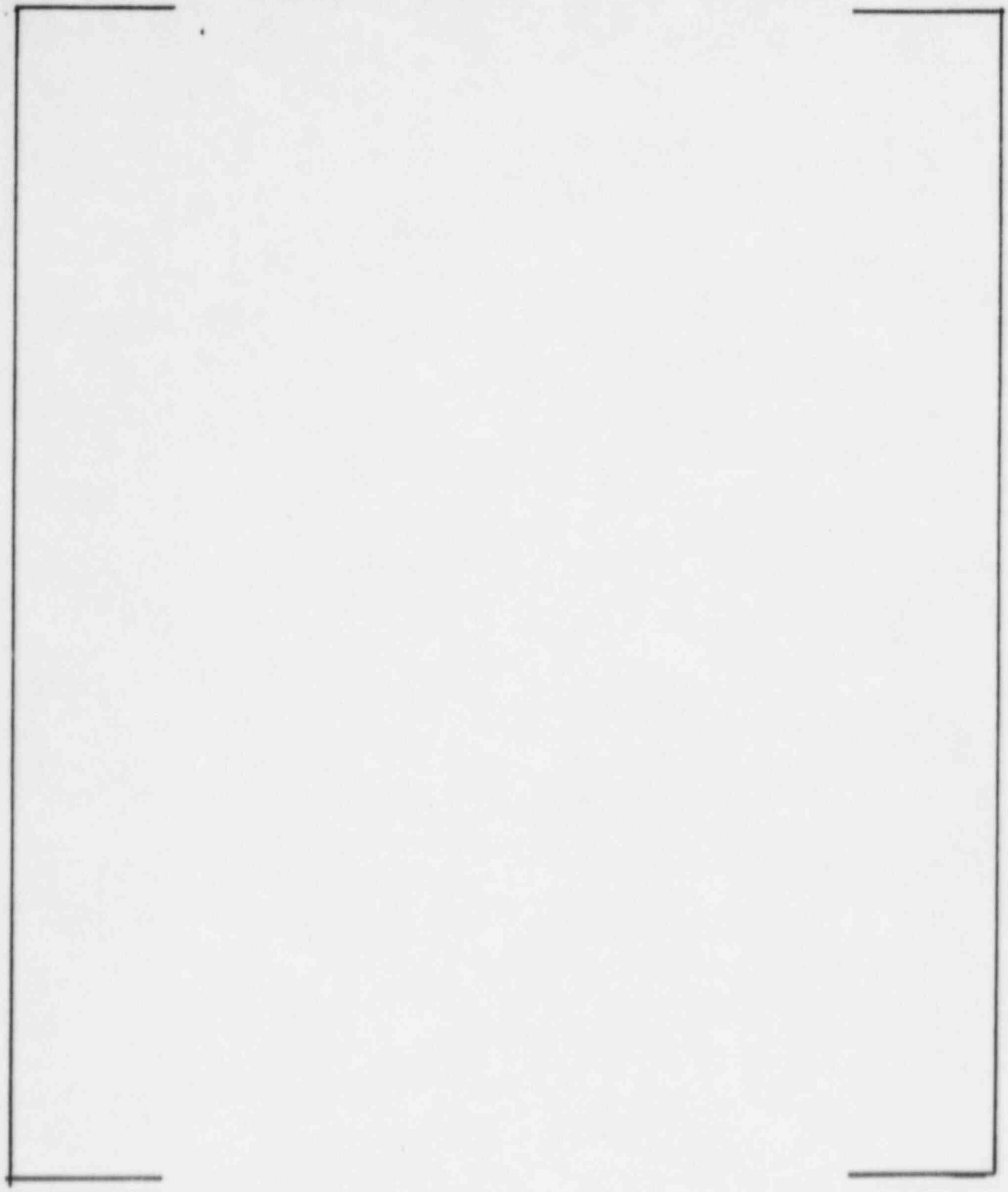
*Systems Standard Design Criteria, Nuclear Steam Supply System, Design Transients, Revision 2, dated April 15, 1974.

Appendix A presents replacement 3XL, 4XL design transients information, by written descriptions of the appropriate changes (Part B) and/or by new and replacement pages (Part C).

PART B

DESCRIPTION OF CHANGES

In this part the modifications required to the SSDC 1.3 Rev. 2 transients information are described. The information which follows is identified with the same section and figure numbering system used in the basic document, and in most cases with page numbers. By means of this information and the new and replacement figures in Part C, a copy of SSDC 1.3 Rev. 2 can quickly be converted to a transients document applicable to 3XL and 4XL plants.



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ATTACHMENTS

Appendix A - Revisions applicable to plants with Model E Steam Generators (3XL and 4XL)

SYSTEMS STANDARD DESIGN CRITERIA
NUCLEAR STEAM SUPPLY SYSTEM
DESIGN TRANSIENTS

REVISION 2

WESTINGHOUSE ELECTRIC CORPORATION
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MANAGER, MECHANICAL EQUIPMENT ENGINEERING			W. H. Bamford 4/11/74
MANAGER, MECHANICS & MATERIALS TECHNOLOGY			R. L. Gamble 4/11/74

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SECTION 1
INTRODUCTION

This document presents a brief description and summary of the type and number of plant operational transients which should be considered in analyzing and evaluating the designs of the major components which comprise the NSSS. The document serves as a standard reference on the subject of fluid systems design transients as they relate to system design and equipment specifications.

To provide the necessary high degree of integrity for the equipment in the NSSS, the transient conditions selected for equipment design evaluation are based on conservative estimates of the magnitude and frequency of the temperature and pressure transients resulting from various operating conditions in the plant. (This document describes fluid system pressure, temperature and flow transients only. It does not cover the mechanical loadings on any component.) To a large extent, the specific transient operating conditions considered for design purposes are based upon engineering judgment and experience. The transients selected are representative of operating conditions which prudently are considered to occur during plant operation and that are sufficiently severe or frequent to be of possible significance to component cyclic behavior. The transients selected may not always be completely accurate predictions of plant operations. They should instead be regarded as a conservative representation of transients which, when used as bases for component fatigue evaluation, provide confidence that the component is appropriate for its application over the design life of the plant.

The transients included in this document conform with the ANSI document, "Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants," ANSI N18.2, August 1973. Plant operating conditions which are listed in the ANS Criteria and which produce any significant fluid systems transients are treated in this document. Most of these occurrences are described directly while certain others of the same nature but which are less severe are covered under an "umbrella" by using the most severe transient.

For purposes of equipment evaluation, the number of transient occurrences is based on a plant design life of 40 years. For plants having a design life other than 40 years, the effects of the different number of transient cycles upon component fatigue analysis must be considered.

Again it should be noted that the transients described in this document are based on conservative assumptions and are meant primarily for use in component stress analyses and do not necessarily represent actual plant operation. Since this is a general document, its applicability must be reviewed for any specific plant.

SECTION 2

REACTOR COOLANT SYSTEM TRANSIENTS

2.1 DEFINITIONS AND ORGANIZATION

2.1.1 Definitions of ASME and ANSI Classifications

The conditions considered for selecting the operational transients are broken down into the following categories:

Operating Conditions ASME III	Conditions for Design ANSI N18.2
Normal Conditions	Condition I; Normal Operation
Upset Conditions	Condition II; Incidents of Moderate Frequency
Emergency Conditions	Condition III; Infrequent Incidents
Faulted Conditions	Condition IV; Limiting Faults
Testing Conditions	---

2.1.1-1 ASME Definitions

The above Operating Conditions are defined in the ASME Boiler and Pressure Vessel Code for the design of Class 1 components (ASME Section III, July 1971 edition with Addenda through Winter 1973, paragraphs NB-3113 and NB-3114). These definitions are quoted below:

Normal Conditions Normal conditions are any condition in the course of system startup, operation in the design power range, hot standby and system shutdown, other than Upset, Emergency, Faulted or Testing Conditions.

Upset Conditions (Incidents of Moderate Frequency) Any deviations from Normal Conditions anticipated to occur often enough that design should include a capability to withstand the conditions without operational impairment. The Upset Conditions include those transients which result from any single operator error or control malfunction, transients caused by a fault in a system component requiring its isolation from the system and transients due to loss of load or power. Upset Conditions include any abnormal incidents not resulting in a forced outage and also forced outages for which the corrective action does not include any repair of mechanical damage. The estimated duration of an Upset Condition shall be included in the Design Specifications.

Emergency Conditions (Infrequent Incidents) Those deviations from Normal Conditions which require shutdown for correction of the conditions or repair of damage in the system. The conditions have a low probability of occurrence but are included to provide assurance that no gross loss of structural integrity will result as a concomitant effect of any damage developed in the system. The total number of postulated occurrences for such events shall not cause more than 25 stress cycles having an S_a value greater than that for 10^6 cycles from the applicable fatigue design curves of Figures I-9.0.

Faulted Conditions (Limiting Faults) Those combinations of conditions associated with extremely-low-probability, postulated events whose consequences are such that the integrity and operability of the nuclear energy system may be impaired to the extent that consideration of public health and safety are involved. Such considerations require compliance with safety criteria as may be specified by jurisdictional authorities.

Testing Conditions : Testing conditions are those pressure overload tests including hydrostatic tests, pneumatic tests, and leak tests specified. Other types of tests shall be classified under one of the categories given in NB-3113.

2.1.1-2 ANSI Definitions

In general there is almost direct correlation between the ASME definitions and the ANSI definitions. The "Conditions for Design" as defined in ANSI N18.2, August 6, 1973 are as follows:

Condition I; Normal Operation

Condition I occurrences are operations that are expected frequently or regularly in the course of power operation, refueling, maintenance, or maneuvering of the plant.

Condition II; Incidents of Moderate Frequency

Condition II occurrences include incidents, any one of which may occur during a calendar year for a particular plant.

Condition III; Infrequent Incidents

Condition III occurrences include incidents, any one of which may occur during the lifetime of a particular plant.

Condition IV; Limiting Faults

Condition IV occurrences are faults that are not expected to occur, but are postulated because their consequences would include the potential for the release of significant amounts of radioactive material. Condition IV faults are the most drastic which must be designed against, and thus represent the limiting design case.

2.1.2 Definitions of Plant Operating Conditions

The operating conditions defined below are referred to throughout this document.

Hot Shutdown The plant is in the hot shutdown condition when the control rods are inserted into the core and the reactor is sub-critical and not producing power. For design purposes the Reactor Coolant System is considered to be at normal operating pressure and at no load hot and cold leg temperature, i.e., both at 557°F. The steam generator secondary side is also assumed to be at 557°F and in thermal equilibrium with the primary system.

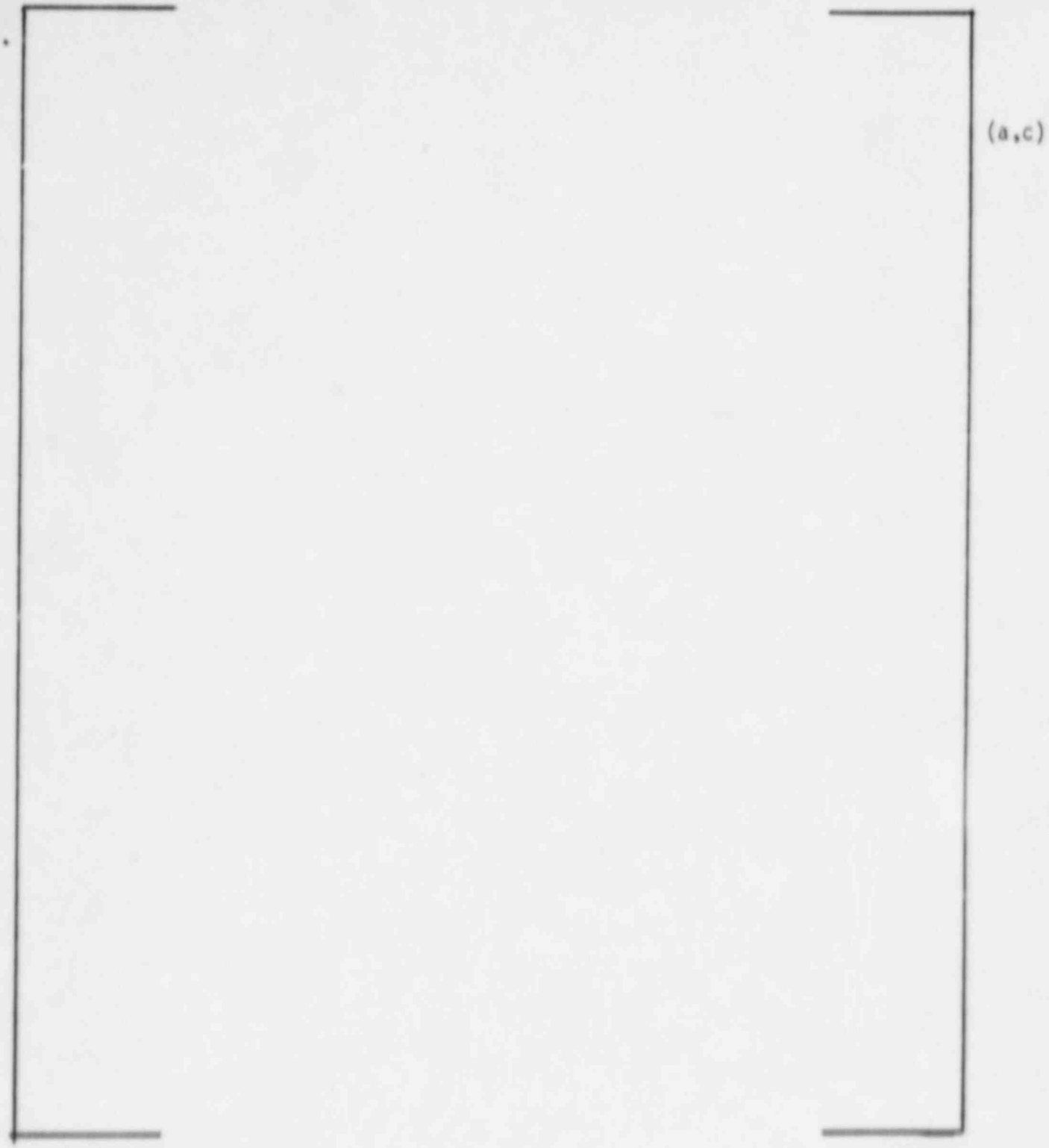
No Load At no load conditions the reactor is subcritical, but with less shutdown margin than at hot shutdown, in anticipation of returning to power. For design purposes the pressure and temperature values are assumed to be the same as at hot shutdown.

Cold Shutdown With the plant in the cold shutdown condition, it is assumed for design purposes that the Reactor Coolant System is depressurized and at a uniform temperature between 70°F and 120°F.

2.1.3 Organization

The transients considered under Section 2 are in response to the ASME and ANS Criteria for Normal, Upset, Emergency, Faulted and Test Conditions discussed in Section 2.1.1. In general, these transients are applicable to more than one component or system, e.g., the Loss of Load transient affects the Reactor Coolant System (Primary System), the pressurizer vessel and the steam generator secondary side. Therefore, Section 2 is divided into subsections dealing with the following major areas:

2.2 Reactor Coolant System (Primary System)
2.3 Pressurizer Vessel
2.4 Steam Generator Secondary Side



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