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Carolina Power & Light Company

August 2, 1979

FILE: NG-3513 (R) SERIAL: GD-79-1978

Mr. James P. O'Reilly
Director of Regulatory Operations
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W., Suite 3100
Atlanta, GA 30303

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
SEISMIC ANALYSES FOR AS-BUILT SAFETY RELATED PIPING SYSTEMS

Dear Mr. O'Reilly:

The following is the 30-day response to IE Bulletin 79-14 as required by your letter of July 2, 1979, as modified by Revision 1 to the Bulletin per your letter of July 18, 1979.

The seismic analysis inspection and verification program currently being performed at the H. B. Robinson Unit No. 2 Plant is designed to demonstrate that the design specifications and drawings used to obtain input information for the seismic analysis of the plant's safety related systems do, in fact, reflect as-built configurations. Alternatively the program is also designed to identify any variances between design documents and piping system configurations that could potentially affect the validity of the seismic analyses performed on all safety-related systems. These variances, if found, will be evaluated to determine the effect of that variance on the operability of that safety-related system.

The inspection and verification program is being conducted by the Carolina Power & Light Company with analytical services provided by Ebasco Services, Inc., New York, New York. The program covers the inspection, examination, evaluation, and any necessary reanalyses of piping systems and piping support systems that have been identified as safety-related systems by the H. B. Robinson Final Safety Analysis Report. The program is intended to meet the requirements of the NRC IE Bulletin 79-14 "Seismic Analyses for As-Built Safety-Related Piping Systems," dated July 2, 1979, as modified by Revision 1 to the Bulletin dated July 18, 1979. 7908170062

A total of 15 systems as delineated in Enclosure 1 are being inspected and verified in accordance with the Bulletin requirements. Inspection activities being performed and inspection elements to be used in verifying that the seismic analysis input information conforms to the actual configuration of safety-related systems are discussed

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in the outline of the program for seismic restraint verification which follows. The inspection and verification program presently being conducted involves a field inspection that verifies and records pipe run geometry, support and restraint design, location, function and clearance, pipe attachments, valve locations, and in addition, a stress analysis review process of all safety related systems. All piping and piping support documentation such as piping drawings, and piping stress isometrics that are input information sources to the stress analysis; and support and restraint design, function and location drawings which are information output from the stress analysis are assembled and given to field inspectors for verification. An examination of the record stress calculations and input is performed concurrently with the field inspection. The results of the field examinations will be examined for any significant deviations between the design and installed arrangements and evaluated to determine whether the operability of the system under specified earthquake loadings is affected. If deviations are found which affect system operability, those deviations will be classified as nonconformances. If nonconformances are determined, appropriate action will be taken in accordance with the H. B. Robinson Technical Specifications. An evaluation of any identified nonconformances, a description of the final results of the reanalysis and a description of modification work which may be required will be submitted to the commission within 60 days after the 120 day report required by IE Bulletin 79-14. This final report will include a description of the revisions to Plant Operating Procedures which provide added assurance that future modifications of piping systems, including their supports, will be reflected in a timely manner in design documents and the seismic analysis.

The inspection and verification program consists of six (6) parts:

1. Documentation Assembly: The compilation and collection of design documents that contain source information for the seismic analysis. Preparation of field verification packages.

2. Field Verification: The physical location and dimensioning of piping configuration restraint and hanger configuration and location and valve location.

3. Analysis of Piping Related Deviations: Review of identified discrepancies to determine if system operability is compromised and/or reanalysis is required.

4. Analysis of Support Related Deviations: Review of identified discrepancies to determine if system operability is compromised and if reanalysis and/or modification is required.

5. Results Documentation: Preparation of supporting documentation that supports the as-built configuration inspection and/or demonstrates the adequacy of the as-built piping and piping support system to withstand specified seismic loadings.

6. Final Report: Preparation of nonconformance evaluations, procedure descriptions, and as-built documents.

Attachment A to this letter lists the design documents which identify the seismic input information for the H. B. Robinson Systems. The documents are of two different types (stress isometrics and piping drawings). The stress isometrics were analyzed using the insulated fluid filled pipe weight and geometry shown as well as the valve weights shown. The piping drawings provide piping size and configuration, valve location information, and represent the basis for the stress isometrics.

Three seismic Class I systems previously discussed in response to IE Bulletin 79-02 are not included in the attached list of systems. These three systems are:

1. Penetration Pressurization System

2. Isolation Valve Seal Water System

3. Station and Instrument Air System

These systems are not included in our list since these seismic Class I safety-related systems are fabricated of small diameter pipe which is not included within the scope of IE Bulletin 79-14 as revised July 18, 1979.

Portions of the following systems are normally accessible for inspection:

Main Steam
Feedwater
Safety Injection & Residual Heat Removal
Closed Cooling Water
Service Water & Cooling Water
Reactor Coolant
Emergency Diesel Generator
Chemical & Volume Control
Steam Generator Blowdown
Waste Disposal
Demineralizer Water
Fire Water
Condensate

The accessible portion of one redundant system path and the accessible portion of nonredundant system paths for the above systems will be inspected and the results reported within the 60-day period referenced in IE-79-14. Portions of some systems above contain piping which are not required for safe shutdown. Examples of such systems are Chemical & Volume Control System and Waste Disposal. The portions of these systems which are not required for safe shutdown are not included with the 60-day inspection even though these portions are not redundant.

All remaining normally accessible systems not required for safe shutdown and the normally inaccessible piping will be inspected within the 120-day period referenced in IE-79-14.

Very truly yours,

B. J. Furr
Manager
Generation Department

FB:CSB:dcj*

Enclosures

ENCLOSURE 1

Documentation listed herein provides the following types of information:

Geometry of piping
Restraint location
Valve location
Temperature
Hot and cold modulus of elasticity
X, Y, Z Coordinates
Valve weight/identification

REACTOR COOLANT SYSTEM

STRESS ISOMETRIC #	TITLE	DATE
RC-1	Primary Coolant Loop 12" Pressure Surge Line	10-9-68
RC-2	Reactor Coolant Piping from Anch. EL 234.50' to Pressure Relief Tk.	10-21-68
RC-3	Reactor Coolant Piping to Pressurizer (Rev. 1)	7-14-70
RC-4	Reactor Coolant Piping from Pressurizer to Pressurizer Relief Tank	10-21-68
RC-5	Primary Coolant System Resistance Temperature Detector	4-10-69
RC-6	Reactor Coolant System 4" RC-70, 3" RC-72 & etc. fr. regenerating HX to Press. Relief Tk.	10-16-68
RC-7	Reactor Building - Drain Ring Header from Coolant Loops & Stand Pipes to Coolant Drain Tank	5-2-69
RC-8	Reactor Building - Drain Ring Header from Coolant Loops & Stand Pipes to Coolant Drain Tank	--
RC-9	Reactor Building - Drain Ring Header from Coolant Loops & Stand Pipes to Coolant Drain Tank	5-2-69
RC-10	Reactor Building - Drain Ring Header from Coolant Loops & Stand Pipes to Coolant Drain Tank	5-2-69

Ebasco Drawings

Title	Dwg. No.	Rev.	Date
Reactor Coolant System	G190270	6	12-17-68
Primary Coolant Loop	G190269	7	10-11-68
Chemical & Volume Control System Piping Plan	G190276	6	4-21-69

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SAFETY INJECTION SYSTEM AND

RESIDUAL HEAT REMOVAL SYSTEM

STRESS ISOMETRIC #	TITLE	DATE
SI-1	Safety Injection from Anchor EL 246.5 to Stm. Gen. Loops 2 & 3 Hot Legs at EL 243.85 (Rev. 2)	1-27-71
SI-2	RHR from Anchor at EL 243'-6" to Reactor Cold Leg & Accumulator #2	9-5-68
SI-3	RHR from Anchor @ 240'-6" to Reactor Hot Let - Stm. Gen. #2	9-5-68
SI-4	SI Piping from Pumps to Anchor at Penetration #43 & Boron Injection Tk.	3-26-69
SI-5	SI Piping from Boron Tank to Penetrations 62, 63, & 64	1-27-71
SI-6	SI System from Penetration #63 to Line 10" SI-47 (2" SI-63)	7-14-70
SI-7	SI System from Penetration #62 to Line 10" SI-48 (2" SI-64)	4-7-69
SI-8	SI System from Penetration #64 to Line 10" SI-54	4-7-69
SI-9	SI Piping from Pump "B" to Anchor Penetration #45	3-21-69
SI-10	SI Piping from Pump "A" to Anchor at Penetration #44	3-21-69
SI-11	SI Sys. from Anchor at 246.50' to Anchor at 245.25	4-28-69
SI-11A	SI Sys. from Anchor at 246.50' to Anchor at 245.25	4-28-69
SI-13	SIS from Anchor @ EL 389.0' to Anchor Pts. 145.209 & 228	4-29-69
SI-13A	SIS from Anchor @ EL 389.0' to Anchor Pts. 145.209 & 228	4-29-69
SI-14	SIS 6" SI-127 Ring Header	5-16-69
SI-15	SIS 6" SI-130 Ring Header	4-30-69
SI-16	SIS 4" SI-128 Ring Header	5-16-69
SI-17	SIS 4" SI-131 Ring Header	5-16-69
SI-18	SIS 1½" SI Ring Header	5-16-69
SI-19	SIS 1½" SI-132 Header	4-30-69

SAFETY INJECTION SYSTEM AND RESIDUAL HEAT REMOVAL SYSTEM (Continued)

STRESS ISOMETRIC #	TITLE	DATE
SI-20	SI from Refueling Water Tank to Residual Heat Removal Pump "A" & "B"	9-5-68

Ebasco Drawing Title	Dwg. No.	Rev.	Date
Safety Injection System SH-1 Plan	G190281	5	3-12-69
SH-2 Plan	G190282	--	--
Sections	G190283	4	3-12-69
Containment Spray	G190284	2	4-17-69
Residual Heat Removal Piping	G190267	3	5-15-68

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CHEMICAL VOLUME CONTROL SYSTEM

STRESS ISOMETRIC #	TITLE	DATE
CH-1	CVC Piping Monitor Pumps "A" & "B" Suction from Monitor Tanks "A" & "B"	6-25-68
CH-2	CVC Piping Recirculating Pump Suction from Holdup Tanks "A", "B", "C"	6-22-68
CH-3	CVC Piping Recirculating Pump Discharge to Holdup Tanks "A", "B", & "C"	6-21-68
CH-4	CVC from Regenerative Hx to Reactor Inlet Pipe	10-18-68
CH-5	CVC from Regenerative Hx to Steam Generator Loop 1	4-18-69
CH-6	CVC from Anchors @ EL 237.50' & EL 241.25' to Non-Regenerative Hx	5-15-69
CH-7	CVC Anchor EL 242.22' to Regen. Hx	5-19-69
CH-8	Primary Coolant Loop Fm. Cool Pump Loop 2 to excess Letdown Hx.	11-4-69
CH-9	CVC Demineralizer Area	7-18-69
CH-10	Demineralizer Piping from Resin Fill Tank Disch. to Demins.	9-23-68

Ebasco Drawing Title	Dwg. No.	Rev.	Date
Chemical & Volume Control System Plan SH-1	G-190276	5	12-17-68
Plan SH-2	G-190277	-	--
Sections	G-190278	5	12-12-68
Demineralizer Piping Plan	G-190279	4	9-3-68
Isometrics - CVCS	SK-B190319	8	3-28-69

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FEEDWATER SYSTEM

STRESS ISOMETRIC #	TITLE	DATE
FW-1	Feedwater Piping from Aux. F.W. Pump Disch. to Anchor Points 36, 73, 109 @ EL 244.00' Steam Driven (Rev. 1)	1-31-69
FW-2	F.W. Piping Reactor Area	-
* FW-3		
* FW-4		
FW-5	FW Piping Reactor Area	4-5-67
FW-6	Turbine Bld. FDW Piping from Anchor EL-227.50 to Anchor in Reactor Bldg.	8-20-68
FW-7	Turbine Bld. FDW Pump A & B Disch to heater 6A & 6B and to Anchor at EL 227.50 & 244.00	1-17-68

*Drawings are not located at this time.

Ebasco Drawing Title	Dwg. #	Rev.	Date
Mainsteam & Feedwater Piping SH-1	G190206	6	16-30-68
Mainsteam & Feedwater Piping SH-2	G190207	7	12-20-68

WASTE DISPOSAL SYSTEM

STRESS ISOMETRIC #	TITLE	DATE
WD-1	Waste Disposal Piping from Reactor Coolant Dr. Tank to Reactor Cool. Dr. Pumps A-B	9-25-68
WD-2	Waste Disposal Piping fr. Reactor Cool Drain Pumps A & B to Ten S-20	9-25-68
*WD-3	Waste Disposal from Sump Pumps A & B to Anchor Penet S-13 2" WD-50.51	-
*WD-4	Waste Disposal from Holdup Tank A, B, C & Component Cooling Surge Tank to Waste Holdup Tank	-

*Drawings Are Not Located At This Time.

Ebasco Drawing Title	Dwg. No.	Rev.	Date
Waste Disposal Piping SH-1	G190255	0	7-29-68

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MAINSTEAM SYSTEM

STRESS ISOMETRIC #	TITLE	DATE
MS-1	Mainsteam Piping Reactor Area	3-29-67
MS-2	Mainsteam Piping in Turbine Area (Class I)	9-19-68
MS-3	Turbine Building Mainsteam to Condenser A & B, Moisture Separators 1-A, 1-B, 2-A, 2-B, Steam Seal Rec. & Turbine	-
MS-4	Aux. Feedwater Pump Steam Supply	9-11-70

Ebasco Drawing Title	Dwg. #	Rev.	Date
Mainsteam & Feedwater Piping SH-1	G190206	1	8-28-68
Mainsteam & Feedwater Piping SH-2	G190207	5	9-11-68

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STEAM GENERATOR BLOW DOWN SYSTEM

STRESS ISOMETRIC #	TITLE	DATE
B-1	Reactor Building - Stm. Gen. Blowdown Steam Gen. "A" to Anchor Pt. 63 @ EL 229.167	6-26-70
B-2	Reactor Building - Stm. Gen. Blowdown from Anch. Pt. 63 @ EL 229.167 to Anch. Pt 101 @ 237.5	5-28-69
B-3	Reactor Building - Stm. Gen. Blowdown from Stm. Gen. "B" to Penetration #13 @ EL 234.5	6-27-70
B-4	Reactor Building - Stm. Gen. Blowdown Stm. Gen. "C" to Anchor Penetration 14 @ EL 237.50	6-5-69

Ebasco Dwg. Title	Dwg. #	Rev.	Date
Steam Generator Blowdown System	G190234	2	5-29-69

SYSTEM TITLE		DWG. #	DATE
Condensate	Condensate Piping	G-190213	-
Service & Cooling Water	Service & Cooling Water R/BAB	G-190225	-
	Service & Cooling Water R/BAB	G-190226	-
Fire Water	Fire Water Piping	G-190229	-
Diesel Generator	Emergency Diesel Generator Piping	G-190236	-
			-
Demineralizer Water	Primary & Demineralizer Water	G-190259	-
	Demineralizer Piping	G-190279	-
Component Cooling	Reactor Component Cooling System Sect. & Dets	G-190271	-
	Reactor Component Cooling System Plan	G-190272	-
	Reactor Component Cooling System Sect.	G-190273	-
Post Accident Containment Vent	None Identified		

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NRC PDR
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AUGUST 1 1979

Docket Nos. 50-261
50-324
and 50-325

Mr. J. A. Jones
Senior Vice President
Carolina Power & Light Company
336 Fayetteville Street
Raleigh, North Carolina 27602

Dear Mr. Jones:

On September 14, 1977, you submitted letters regarding ANSI STANDARDS in effect at H. B. Robinson Steam Electric Plant, Unit No. 2 and Brunswick Steam Electric Plant, Units Nos. 1 and 2. These letters were essentially identical and provided four (4) changes or clarifications to the QA programs for operation for these two (2) facilities.

Then, on February 14, 1979, you submitted a letter committing to Regulatory Guide 1.144, "Auditing of Quality Assurance Programs for Nuclear Power Plants," dated January, 1979.

And finally, on April 23, 1979 you submitted two (2) letters proposing changes to your Quality Assurance programs. One letter changed the reference for calibration control of radiation survey and measuring instruments from the radiation protection manual to the CP&L Corporate Quality Assurance Manual. The other letter clarified how calibration status of portable measuring and test equipment and installed instrumentation will be noted in tags, labels, and status cards.

This is to advise you that we have reviewed the information contained in your letters of September 14, 1977, February 14, 1979, and April 23, 1979. We conclude that revision of the provisions of the Quality Assurance Programs at the Robinson and Brunswick facilities to reflect the above information would be consistent with the requirements and intent of Appendix B to 10 CFR 50 and is, therefore acceptable.

Sincerely,

Original signed by

Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

OFFICE	ORB #3			ORB #1
SURNAME	Hannon/Ippolito			DNeighbors
DATE	7/31/79			7/31/79

cc: See next page

NRC FORM 318 (9-76) NRCM 0240 ★ U.S. GOVERNMENT PRINTING OFFICE: 1978 - 288 - 769

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cc:

Richard E. Jones, Esquire
Carolina Power & Light Company
336 Fayetteville Street
Raleigh, North Carolina 27602

Georgia F. Trowbridge, Esquire
Shaw, Pittman, Potts & Trowbridge
1800 M Street, N. W.
Washington, D. C. 20036

John J. Burney, Jr., Esquire
Burney, Burney, Sperry & Barefoot
110 North Fifth Avenue
Wilmington, North Carolina 28461

Mr. Franky Thomas, Chairman
Board of Commissioners
P. O. Box 249
Bolivia, North Carolina 28422

Denny McGuire (Ms)
State Clearinghouse
Division of Policy Development
116 West Jones Street
Raleigh, North Carolina 27603

Southport - Brunswick County Library
109 W. Moore Street
Southport, North Carolina 28461

Director, Technical Assessment Division
Office of Radiation Programs (AW-459)
US EPA
Crystal Mall #2
Arlington, Virginia 20460

U. S. Environmental Protection Agency
Region IV Office
ATTN: EIS COORDINATOR
345 Courtland Street, N. W.
Atlanta, Georgia 30308

Hartsville Memorial Library
Home and Fifth Avenues
Hartsville, South Carolina 29550

John F. Wolf, Esquire, Chairman
3409 Shepherd Street
Chevy Chase, Maryland 20015

Dr. A. Dixon Callihan
Union Carbide Corporation
P. O. Box Y
Oak Ridge, Tennessee 37830

Dr. Richard F. Cole
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555