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F. L. CLAYTON, JR.
Senior Vice President

Alabama Power
the southern electric system

June 30, 1980

Docket No. 50-364

Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. A. Schwencer

JOSEPH M. FARLEY NUCLEAR PLANT - UNIT 2
SEISMIC QUALIFICATION REVIEW

Gentlemen:

Enclosed is the detailed qualification summary information for each of the non-NSSS mechanical and electrical equipment items selected by the Seismic Qualification Review Team for further evaluation.

Should you have any questions, please advise.

Yours very truly,

F. L. Clayton, Jr.

CLB/rt

Enclosure

cc: Mr. R. A. Thomas
Mr. G. F. Trowbridge
Mr. L. Kintner (w/enclosure)
Mr. W. Bradford

B001
S, 1/1

THIS DOCUMENT CONTAINS
POOR QUALITY PAGES

8007090237

Qualification Summary of Equipment

I. Plant Name: J. M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name REACTOR CONTAINMENT AIR COOLER UNITS

1. Scope: [ ] NSSS [X] BOP

2. Model Number: NA Quantity: 4

3. Vendor: American Air Filter

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Air Cooler Unit

b. Dimensions 11'-5" x 11'-5"

c. Weight 27,820#

6. Location: Building: Containment

Elevation: 155'

7. Field Mounting Conditions [X] Bolt (No.____, Size____)
[ ] Weld (Length____)
[ ] ____

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: NA F/B: V:

9. a. Functional Description: Cool Containment during normal operation and following a LOCA

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications: SS-1102-14

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: _____

Analysis: X

Combination of Test and Analysis: _____

Test and/or Analysis by American Air Filter TEP 495
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): FNP Seismic spectra- See SS-1102-14

3. Required Acceleration in Each Direction: See FNP Response Spectra

S/S =_____ F/B =_____ V =_____

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [ ]_____

2. [ ] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range:_____

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = _____ F/B = _____ V = ____

7. Laboratory Mounting:

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [ ] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made:_____

_____

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[X] Dynamic Analysis: [ ] Time-History
[X] Response Spectrum

3. Model Type: [X] 3D [ ] 2D [ ] 1D

[ ] Finite Element [X] Beam [ ] Closed Form Solution

4. [X] Computer Codes: STRESST, DYSTRESS, DYNAL

Frequency Range and No. of modes considered: 35cps; 18 modes

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [X] SRSS
[ ] Other: _____ (specify)

6. Damping: NA Basis for the damping used: _____

7. Support Considerations in the model: NONE

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B. Max. Deflection	Location	Effect Upon Functional Operability

See SS-1102-14

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name REACTOR CAVITY HYDROGEN DILUTION FANS

1. Scope: [ ] NSSS [X] BOP

2. Model Number: NA Quantity: 2

3. Vendor: Joy Manf.

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Fan

b. Dimensions 25'L x 13.5"R

c. Weight Fan 385 lbs. Motor 130 lbs./Steel Inlet Bell & Screen 15 lbs.

6. Location: Building: Containment

Elevation: 129'

7. Field Mounting Conditions [X] Bolt (No.____, Size____)
[ ] Weld (Length____)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: NA F/B: V:

9. a. Functional Description: Dilution of Hydrogen in Reactor Cavity

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications: SS-1102-106

III. Is Equipment Available for Inspection in the Plant: [ ] Yes [ ] No

IV. Equipment Qualification Method: Test: _____

Analysis: X _____

Combination of Test and Analysis: _____

Test and/or Analysis by Joy Manf. Company
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): FNP Seismic Analysis- See SS-1102-106

3. Required Acceleration in Each Direction: See FNP Response Spectra

S/S =_____ F/B =_____ V =_____

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [ ]_____

2. [ ] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range:_____

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = _____ F/B = _____ V = ____

7. Laboratory Mounting:

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [ ] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made:_____

_____

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[X] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [X] 3D [ ] 2D [ ] 1D

[ ] Finite Element [X] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[X] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable
Shaft				3064psi	

B. Max. Deflection	Location	Effect Upon Functional Operability
.0035in.	Shaft	None

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name EMERGENCY AIR COMPRESSOR

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 10T3NLE10 Quantity: 2

3. Vendor: Ingersoll-Rand Company

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Type 30 Air Compressor

b. Dimensions 70'L x 66'H 26"W

c. Weight 1,500#

6. Location. Building: Auxiliary

Elevation: 100'

7. Field Mounting Conditions [X] Bolt (No. 8 , Size 5/8")
[ ] Weld (Length)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: NA F/B: V:

9. a. Functional Description: Redundancy to Main Air Compressor

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[ ] Both Possible use after steam line break

10. Pertinent Reference Design Specifications: SS-1102-136

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Wyle Laboratories 42746-1
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs) FNP Seismic Response Spectrum-See SS-1102-136

3. Required Acceleration in Each Direction: See FNP Response Spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [X] Multi-Frequency: [X] random [ ] sine beat [ ]_____

2. [ ] Single Axis [X] Multi-Axis

3. No. of Qualification Tests: OBE 4 SSE 1 Other_____ (specify)

4. Frequency Range: 1 Hz - 40 Hz

5. TRS enveloping RRS using Multi-Frequency Test [X] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = NA F/B = _____ V = ____

7. Laboratory Mounting:

1. [X] Bolt (No. 8, Size 5/8") [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made:_____

_____

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B. Max. Deflection	Location	Effect Upon Functional Operability

FULL SCALE SHOCK SPECTRUM (g Peak)

1.0 ☐ 10 ☒ 100 ☐ 1000 ☐

J/N 42746
Page
Date 6-8-74

DAMPING 1/2%

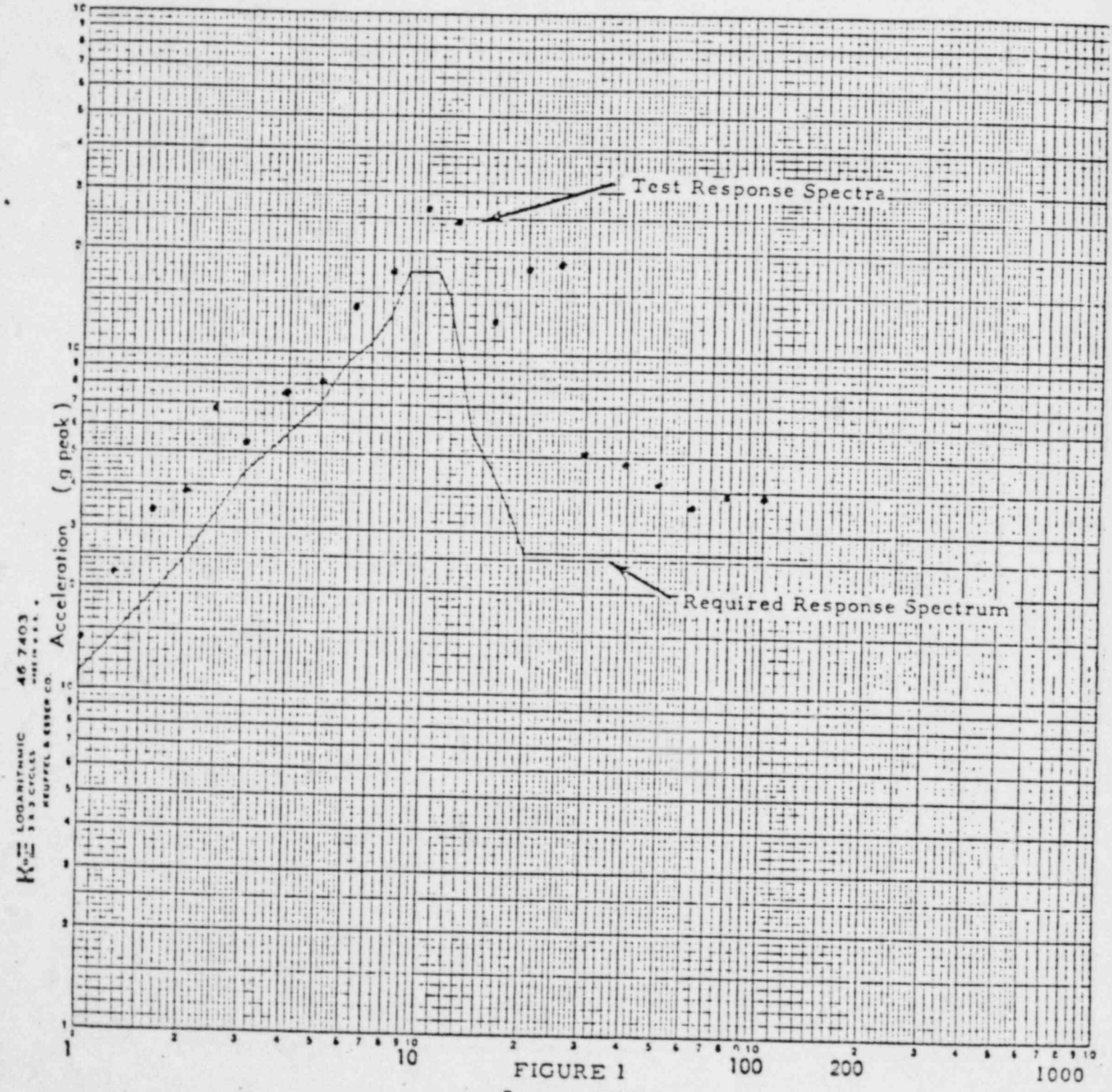


FIGURE 1

CUSTOMER Ingersoll-Rand
SPECIMEN
S/N

AXIS Vertical and Lateral
LOCATION NO. VCA
TEST RUN NO. 9

FULL SCALE SHOCK SPECTRUM (g Peak)

1.0 ☐ 10 ☒ 100 ☐ 1000 ☐

J/N 42746
Page
Date 6-8-74

DAMPING 1/2%

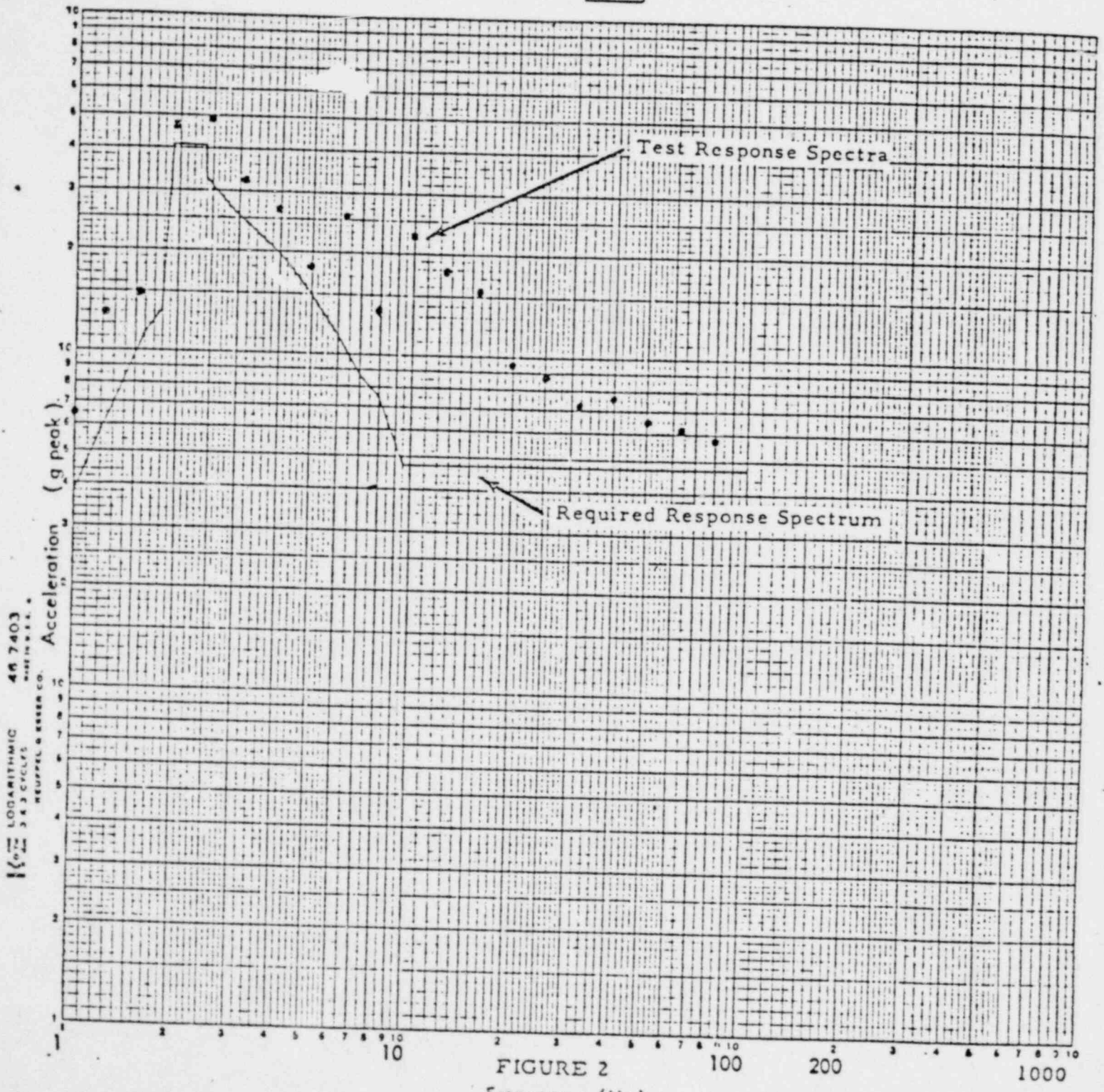


FIGURE 2

CUSTOMER Ingersoll-Rand
SPECIMEN
S/N

AXIS Vertical and Lateral
LOCATION NO. HCA
TEST RUN NO. 9

FULL SCALE SHOCK SPECTRUM (g Peak)

1.0 ☐ 10 ☒ 100 ☐ 1000 ☐

J/N 42746
Page
Date 6-8-74

DAMPING 1/2%

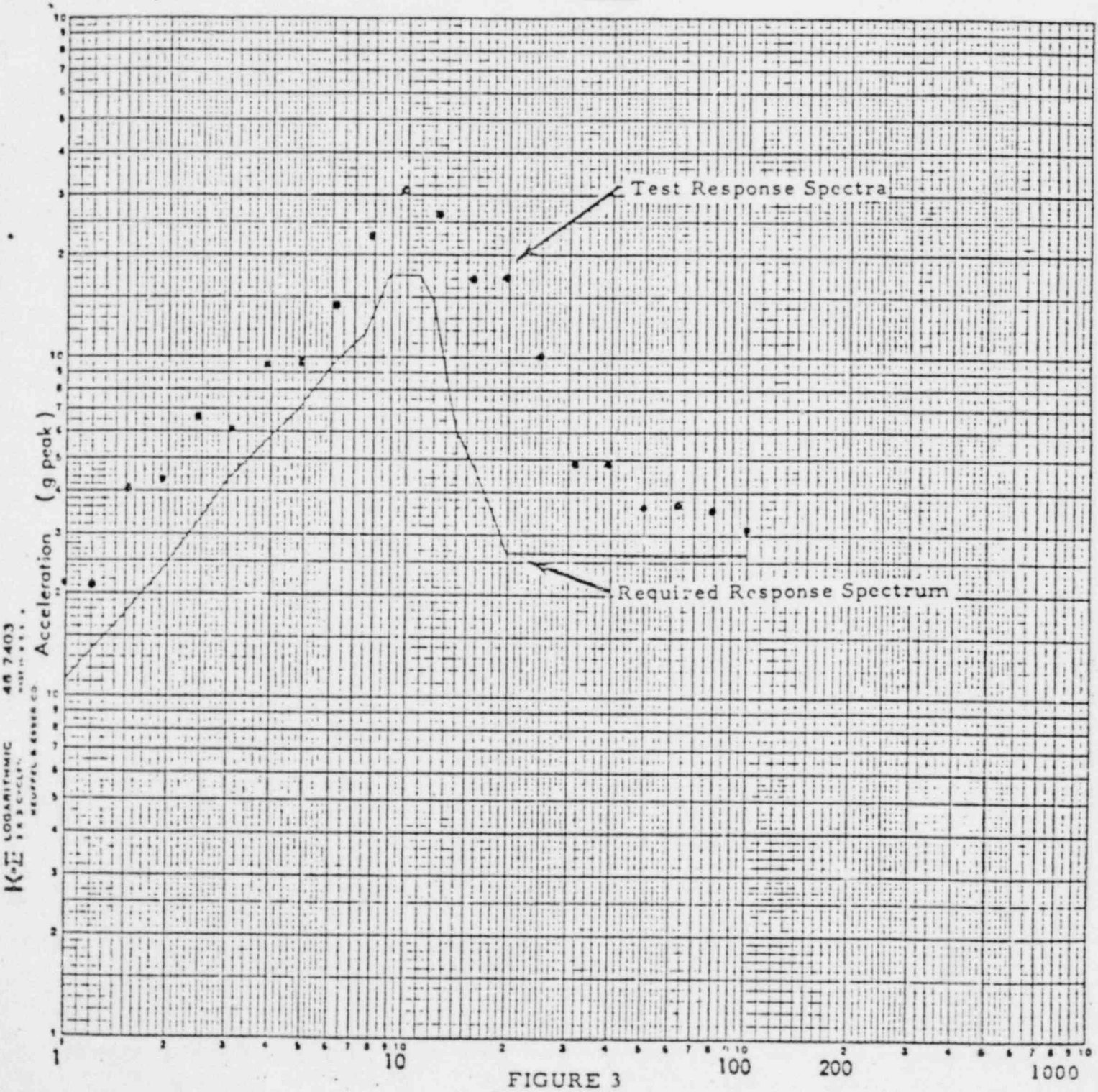


FIGURE 3

CUSTOMER Ingersoll-Rand
SPECIMEN
S/N

AXIS Longitudinal/Vertical
LOCATION NO. VCA
TEST RUN NO. 14

FULL SCALE SHOCK SPECTRUM (g Peak)

1.0 ☐ 10 ☒ 100 ☐ 1000 ☐

J/N 42746
Page
Date 6-8-74

DAMPING [1,]

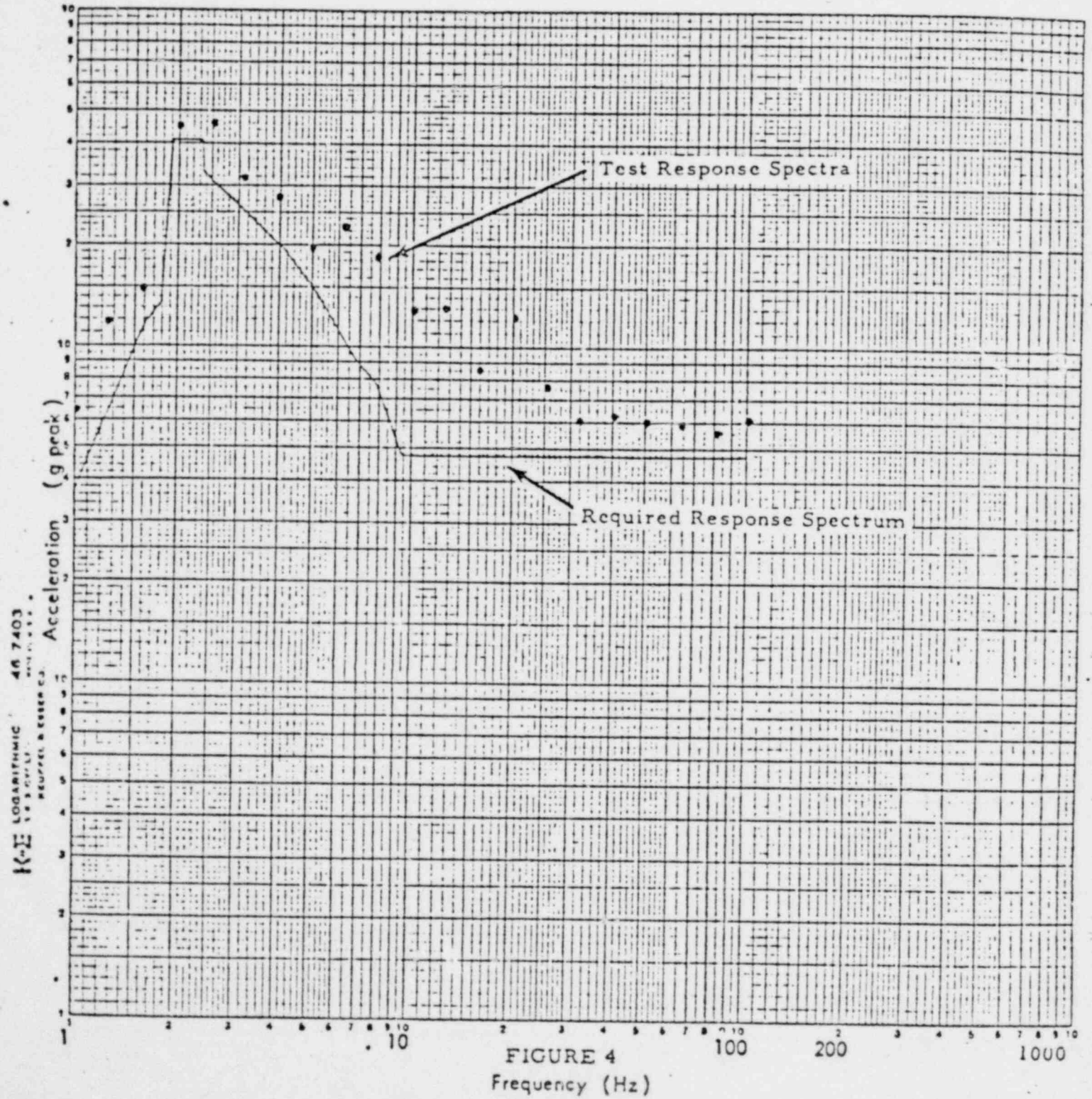


FIGURE 4

CUSTOMER Ingersoll-Rand

AXIS Longitudinal/Vertical

SPECIMEN

LOCATION NO. HCA

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name COMPONENT COOLING WATER HEAT EXCHANGER

1. Scope: [ ] NSSS [X] BOP

2. Model Number: NA Quantity: 3

3. Vendor: Struthers Wells Corporation

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Desc.iption a. Appearance Tubular Heat Exchanger

b. Dimensions 52"I.D. x 29'-0" Long

c. Weight 53,000 lbs dry 84,250 Flooded

6. Location: Building: Auxiliary

Elevation: 100'

7. Field Mounting Conditions [X] Bolt (No. 4 , Size 1")
[ ] Weld (Length)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: 25.9 Hz F/B: V:

9. a. Functional Description: To transfer heat from the component cooling water to service water

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications: SS-1302-11

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: _____

Analysis: X

Combination of Test and Analysis: _____

Test and/or Analysis by Struthers Wells Corporation
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP Response Spectra

3. Required Acceleration in Each Direction: See FNP Response Spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [ ]_____

2. [ ] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____SSE_____Other_____
(specify)

4. Frequency Range:_____

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = _____ F/B = _____ V = ____

7. Laboratory Mounting:

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [ ] Yes [ ] No [ ] Not Applicable

9. Tes Results including modifications made:_____

_____

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[X] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [X] 3D [ ] 2D [ ] 1D

[ ] Finite Element [X] Beam [ ] Closed Form Solution

4. [X] Computer Codes: TUSUP

Frequency Range and No. of modes considered: _____

[X] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name SUMP PUMP

1. Scope: [ ] NSSS [X] BOP

2. Model Number: GVBS-3K Quantity: 9

3. Vendor: Crane Chempump

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Sump Pump

b. Dimensions 12'-1/8" x 10'-3/4" (Varies)

c. Weight 102.8# (Varies)

6. Location: Building: Auxiliary & Containment

Elevation: Varies with location

7. Field Mounting Conditions [X] Bolt (No.____, Size____) Varies
[ ] Weld (Length____)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: NA F/B: V:

9. a. Functional Description: To pump water out of a sump.

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both Leak Detection

10. Pertinent Reference Design Specifications: SS-1302-12

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: _____

Analysis: X

Combination of Test and Analysis: NA

Test and/or Analysis by Chempump A-18219
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): FNP Response Spectra- See SS-1302-12

3. Required Acceleration in Each Direction: See FNP Response Spectra

S/S =_____ F/B =_____, _____ V =_____

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [ ]_____

2. [ ] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range:_____

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = _____ F/B = _____ V = _____

7. Laboratory Mounting:

1. [ ] Bolt (No._____, Size_____) [ ] Weld (Length_____) [ ]_____

8. Functional operability verified: [ ] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made:_____

_____

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[X] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [X] 1D

[ ] Finite Element [X] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[X] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: 1 Support Pipe

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable
Support Pipe				2,495	18,800
Weld - S.Pipe to Cover				.096	.250min
Pump Cover				1,965	±18,800
Shaft				1,765	18,800

B.

Max. Deflection	Location	Effect Upon Functional Operability
.000988	Impeller	No Effect

Qualification Summary of Equipment

I. Plant Name: J. M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel PWR

II. Component Name BORIC ACID TANKS

1. Scope: [ ] NSSS [X] BOP

2. Model Number: NA Quantity: 2

3. Vendor: Mitternight Boiler Works, Inc.

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Vessel Cylindrical

b. Dimensions 25'H x 12'-9"Ø

c. Weight 13,670#

6. Location: Building: Auxiliary

Elevation: 100'

7. Field Mounting Conditions [X] Bolt (No. 8 , Size 1.5"Ø)
[ ] Weld (Length)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: 50 Hz F/B: V:

9. a. Functional Description: Containment of Boric Acid

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications: SS-1102-30

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: _____

Analysis: X

Combination of Test and Analysis: _____

Test and/or Analysis by URS/John A. Blume Ass. Engineer
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____
2. Required Response Spectra (attach the graphs): FNP Seismic Spectra- See SS-1102-30
3. Required Acceleration in Each Direction: See FNP Response Spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [ ]_____
2. [ ] Single Axis [ ] Multi-Axis
3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)
4. Frequency Range:_____
5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No
6. Input g-level Test at S/S = _____ F/B = _____ V = ____
7. Laboratory Mounting:

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [ ] Yes [ ] No [ ] Not Applicable
9. Test Results including modifications made:_____

_____

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[X] Dynamic Analysis: [X] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [X] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution
{X} Mass Point

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: NA

[X] Hand Calculations

5. Method of Combining Dynamic Responses: [X] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: NA Basis for the damping used: _____

7. Support Considerations in the model: Support lugs

8. Critical Structural Elements: See also SS-1102-30

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable
Full conditions				1.8ksi	17.7ksi

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name LIMIT SWITCH

1. Scope: [ ] NSSS [X] BOP

2. Model Number: EA-170 Quantity:

3. Vendor: NAMCO

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Limit Switch Box

b. Dimensions 3"x2"x1"

c. Weight Less than 11 lbs.

6. Location: Building: Auxiliary

Elevation: Varies according to location

7. Field Mounting Conditions [X] Bolt (No. 2, Size #10) Varies according to location
[ ] Weld (Length)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: NA F/B. V:

9. a. Functional Description: Position indication

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[ ] Both NA

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Acme-Cleveland Development Company
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP Response Spectra

3. Required Acceleration in Each Direction: See FNP Response Spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [X] sine beat [ ] _____

2. [X] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range: 1 - 35 Hz

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = _____ F/B = _____ V = ____

7. Laboratory Mounting: 0.6g → 9.52g over range of 1-35 Hz

1. [X] Bolt (No. 2, Size #10) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: The trip position of each switch remained within the required limit.

10. Other tests performed (such as fragility test, including results): Fragility, Sine Sweep, Sine Dwell - All switches performed with no malfunctions for all tests

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR x

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name SERVICE WATER PUMP

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 27CC Quantity: 5

3. Vendor: Johnston Pump Company

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Service water pump

b. Dimensions 30"Ø / Head-175'

c. Weight 1127#

6. Location: Building: Service water structure

Elevation: 191'-6"

7. Field Mounting Conditions [X] Bolt (No. 4 , Size 1 3/8")
[ ] Weld (Length)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: 16.33 Hz F/B: V: 145 Hz

9. a. Functional Description: To pump service water into cooling system

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications: SS-1105-7

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: _____

Analysis: X

Combination of Test and Analysis: _____

Test and/or Analysis by Nickerson/Brown Consulting Engineers
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[ ]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[X]Combination of Seismic and Operating

2. Required Response Spectra (attach the graphs): See SS-1105-7

3. Required Acceleration in Each Direction: See FNP Response Spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [ ] _____

2. [ ] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range: _____

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = _____ F/B = _____ V = ____

7. Laboratory Mounting:

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [ ] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: _____

_____

10. Other tests performed (such as fragility test, including results): _____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[X] Dynamic Analysis: [ ] Time-History
[X] Response Spectrum

3. Model Type: [ ] 3D [X] 2D [ ] 1D

[ ] Finite Element [X] Beam [ ] Closed Form Solution

4. [X] Computer Codes: BMDAT, CANBM, SCANBM, MOMTS, BEAM, MDLDF, SMOMTS

Frequency Range and No. of modes considered: 5 modes

[X] Hand Calculations

5. Method of Combining Dynamic Responses: [X] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: 3%OBE,5%DBE Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B. Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name EXCESS FLOW CHECK VALVE

1. Scope: [ ] NSSS [X] BOP

2. Model Number: FVL 48F Quantity:

3. Vendor: Marotta Scientific Controls

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance TEE BODN Check VL1 3" Nom Dia. Solenoid Opgr.

b. Dimensions 10"(L) x 4.25"(W) x 7.75"(H)

c. Weight NA

6 Location: Building: CTMT Bldg.

Elevation: 108'-6" P-23

7. Field Mounting Conditions [ ] Bolt (No. , Size)
[X] Weld (Length 13")
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: NA F/B: V:

9. a. Functional Description: Limit excess flow from containment.

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[ ] Both
{X} None

10. Pertinent Reference Design Specifications:
SS-1102-127

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by American Environments Company, Inc.
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP Response Spectra

3. Required Acceleration in Each Direction:

S/S = 3g F/B = 3g V = 3g

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [X] continuous sine sweep & dwell

2. [ ] Single Axis [X] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other 2 {valve open / valve closed} (specify)

4. Frequency Range: 3 to 33 Hz

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 3g F/B = 3g V = 3g

7. Laboratory Mounting: Clamped between Flanges

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [ ] Yes [ ] No [X] Not Applicable

9. Test Results including modifications made: No modifications, No physical damage - Post seismic operation revealed no malfunctions

10. Other tests performed (such as fragility test, including results):_____
Hydro test - No physical damage or seat leakage

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B. Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name RELIEF VALVE

1. Scope: [ ] NSSS [X] BOP

2. Model Number: NA Quantity:

3. Vendor: Lonergan

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance 3/4" x 1" 150# Angle Relief Valve

b. Dimensions 9" x 6"

c. Weight 9 lbs.

6. Location: Building: Auxiliary

Elevation:

7. Field Mounting Conditions [x] Bolt (No. 4 , Size 5/8")
[ ] Weld (Length)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: 202 Hz F/B: V:

9. a. Functional Description: Overpressurization relief

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[ ] Both
{X} None

10. Pertinent Reference Design Specifications:

7597-20-M6i

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: _____

Analysis: X

Combination of Test and Analysis: _____

Test and/or Analysis by Lonergan
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP Response Spectra

3. Required Acceleration in Each Direction:

S/S = 3g F/B = 3g V = 3g

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [ ]_____

2. [ ] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range:_____

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = _____ F/B = _____ V = ____

7. Laboratory Mounting:

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [ ] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made:_____

_____

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[X] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [X] 2D [ ] 1D

[ ] Finite Element [X] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[X] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: Flange _____

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable
Cast Body					16,200

B. Max. Deflection	Location	Effect Upon Functional Operability
Not Calculated		

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name CONTAINMENT PURGE ISOLATION VALVE

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 48" NRIA w/BETTIS T520-SR2 Quantity: 4

3. Vendor: Henry Pratt Company

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Butterfly Valve 48" I.D.
   b. Dimensions 69 11/16"(H) X 59 ½" (W) (Valve Only)
   98 5/8" (H) X 115 3/4"(W) X 20"(D) (Valve & Actuator)
   c. Weight 6550# valve and operator

6. Location: Building: Auxiliary Building - V281, V284
   Containment Building - V282, V283
   Elevation: 130'-6"

7. Field Mounting Conditions [X] Bolt (No. 44, Size 1")
   [X] Weld (Length 138")
   [ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):
   S/S: NA F/B: V:

9. a. Functional Description: Containment Air supply & exhaust closing time 5 seconds - fail closed
   b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
   [ ] Both Neither

10. Pertinent Reference Design Specifications:
    SS-1102-50

III. Is Equipment Available for Inspection in the Plant: [ ] Yes [ ] No

IV. Equipment Qualification Method: Test: _____

Analysis: X

Combination of Test and Analysis: _____

Test and/or Analysis by Henry Pratt Company - Report # D-0006-1
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP Response Spectra

3. Required Acceleration in Each Direction:

S/S = 3g F/B = 3g V = 3g

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [ ]_____

2. [ ] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range:_____

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = _____ F/B = _____ V = ____

7. Laboratory Mounting:

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [ ] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made:_____

_____

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[X] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [X] 1D

[ ] Finite Element [ ] Beam [X] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[X] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: Body assumed fixed

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B. Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name 60" MOTOR OPERATED BUTTERFLY VALVE

1. Scope: [ ] NSSS [X] BOP

2. Model Number: Triton-XL Quantity: 6

3. Vendor: Henry Pratt Company

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance

b. Dimensions 73" Dia., 20" length

c. Weight Operator - 1100# Valve - 8800#

6. Location: Building: River water structure and valve box at S.W. structure

Elevation: 105'-6" and 183'-0"

7. Field Mounting Conditions [X] Bolt (No. 52 , Size 1-3/4")
[ ] Weld (Length)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: F/B: V:

9. a. Functional Description: On/off service - separates river water pump trains; river water bypass to pond

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown [X] Both

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: _____

Analysis: X

Combination of Test and Analysis: _____

Test and/or Analysis by Henry Pratt Company
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[ ]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[X]Combination of 1 & 2

2. Required Response Spectra (attach the graphs): See FNP Response Spectra

3. Required Acceleration in Each Direction:

S/S = 3g F/B = 3g V = 3g

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [ ] _____

2. [ ] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range:_____

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = _____ F/B = _____ V = ____

7. Laboratory Mounting:

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [ ] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made:_____

_____

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[X] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [X] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [X] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[X] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ]Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name PRESSURE SWITCH

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 604GCX Quantity: 4

3. Vendor: Custom Component Switches

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Rectangular Aluminum Box with Press Por and Conduit Conn.

b. Dimensions 6-1/4" x 4-3/4"x 2-3/4"

c. Weight 1½ lbs.

6. Location: Building: River Water Structure

Elevation: 105'-0"

7. Field Mounting Conditions [X] Bolt (No.____, Size____)
[ ] Weld (Length____)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):
S/S: No resonance found at frequencies 5 - 150 Hz F/B: # as S/S V: # as S/S

9. a. Functional Description: Actuates alarm on 20psi decreasing river water header pressure

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Custom Component Switches
(name of Company or Laboratory & Report No.)
QTR604GCJR0 -5155-01)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP Response Spectra

3. Required Acceleration in Each Direction:

S/S = 3g F/B = 3g V = 3g

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [X] sine beat [ ]_____

2. [X] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range: 5 - 150 - 5 Hz

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 3g F/B = 3g V = 3g

7. Laboratory Mounting:

1. [X] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: Pressure switch met or exceeded all requirements per SQS IEEE standard 344-1971;no electrical contact-chatter or premature actuation due to vibration

10. Other tests performed (such as fragility test, including results):_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B. Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name 4.16KV SWITCHGEAR

1. Scope: [ ] NSSS [X] BOP

2. Model Number: NA Quantity: 1 Set

3. Vendor: Allis-Chalmers

4. If the component is a cabinet or panel, name and model No. of the devices included: Refer to master parts list for busses 2F, 2G, 2H, 2J, 2K and 2L

5. Physical Description a. Appearance Vertical Panel

b. Dimensions Approx 26"W x 71"H x 74"D (each panel)

c. Weight Approx 2100 pounds - each panel

6. Location: Building: 2F,2G-Aux bldg. elevation 139'-0" & 121'-0"
2H,2J-Diesel bldg. elevation 155'-0"
Elevation: 2K,2L-Serv.water bldg.elevation 188'-6"

7. Field Mounting Conditions - NA [ ] Bolt (No.____, Size____)
[ ] Weld (Length____)
[ ] ____

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: 7.5 Hz F/B: 9Hz, 13Hz V: None

9. a. Functional Description: Class 1E 4.16 KV Switchgear

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:
SS-1102-38

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Allis Chalmers Seismic Test Facility Test Report 40012-PR-3004 and 8971-ST-937
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only 4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): OBE & SSE for 3 locations

3. Required Acceleration in Each Direction: See FNP Response Spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [X] sine dwell

2. [X] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other 20 each axis (specify) (Sine dwell)

4. Frequency Range: 1 - 30 Hz

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 0.5g F/B = 0.5g V = 0.5g

7. Laboratory Mounting:

1. [X] Bolt (No. 8, Size 5/8") [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: Acceptable - no structural damage - some acceptable relay chatter

10. Other tests performed (such as fragility test, including results): resonance search at 0.2g input and 0.5 octave per minute

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete: Not Applicable

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B. Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name MEDIUM VOLTAGE ELECTRICAL PENETRATION

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 127D1643 Quantity: 6

3. Vendor: General Electric Company

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Cylindrical Weldment

b. Dimensions Approx 60" (not including J Boxes)

c. Weight

6. Location: Building: Containment

Elevation: 139'-0"

7. Field Mounting Conditions [ ] Bolt (No.____, Size____)
[X] Weld (Length 100% Circumferencial
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: no resonant frequencies below 33Hz F/B: # S/S V: # S/S

9. a. Functional Description: Pressure tight containment penetration for electrical circuits

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

SS-1102-64

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by San Jose Test Facility General Electric Company
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): OBE & SSE RRS for containment @ elevation 155'-0"

3. Required Acceleration in Each Direction:

S/S = .12g ZPA F/B = .11g ZPA V = .108g ZPA

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [X] sine beat [X] sine dwell

2. [X] Single Axis [X] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other 96 sine dwell 20 sine beat (specify)

4. Frequency Range: 1 - 33 Hz

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = .25g F/B = 1.0g V = 0.5g

7. Laboratory Mounting:

1. [ ] Bolt (No.____, Size____) [X] Weld (Length 100% Circumferential) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: Acceptable - no structural damage- no pressure decay, no electrical malfunctions

10. Other tests performed (such as fragility test, including results):_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR x

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name POWER CENTER TRANSFORMER

1. Scope: [ ] NSSS [X] BOP

2. Model Number: PAV0123 & PAV0126 Quantity:

3. Vendor: Westinghouse Electric Corporation

4. If the component is a cabinet or panel, name and model No. of the devices included: NA

5. Physical Description a. Appearance Metal enclosed structure

b. Dimensions PAV 0126 35" x 20½" x 62-3/4"
PAV 0123 44½" x 25¼" x 78"

c. Weight PAV0123 3100 lbs. PAV0126 1510 lbs.

6. Location: Building: Auxiliary Building, River Intake

Elevation: Aux. Bldg. 121', 139' & 155' River Intake- 102'

7. Field Mounting Conditions [ ] Bolt (No.____, Size____)
NA [ ] Weld (Length____)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: 10Hz F/B: 10Hz V: None

9. a. Functional Description: Part of Power Distribution System

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

ss-1102-44

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: _____

Analysis: _____

Combination of Test and Analysis: X

Test and/or Analysis by Westinghouse-Report #SBR-73-3
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): Response Spectra for OBE & SSE Aux. bldg. and river intake

3. Required Acceleration in Each Direction: See FNP response spectra

S/S =_____ F/B =_____ V =_____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [X] sine beat [ ]_____

2. [X] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range: 0.5Hz to 25Hz

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 0.5g(1-5Hz) / 1.0g(5-10Hz) / 0.5g(10-25Hz) F/B = same V = same

7. Laboratory Mounting: NA

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: Acceptable - no structural damage

10. Other tests performed (such as fragility test, including results):_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: Prototype test of larger transformer (1500 KVA), single frequency, single axis resonance-search and sine beat

2. Method of Analysis:

[X] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [X] 1D

[ ] Finite Element [X] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[X] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable
Tie Plate	Top of core & coil		1500KVA= 643psi 1000KVA= 257psi 300KVA= 355psi	- Vibration tested	

B.

Max. Deflection	Location	Effect Upon Functional Operability
N/A		

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name AKD-5 LOW VOLTAGE SWITCHGEAR

1. Scope: [ ] NSSS [X] BOP

2. Model Number: AKD-5 Quantity:

3. Vendor: General Electric Company

4. If the component is a cabinet or panel, name and model No. of the devices included:

as stated on bill of material

5. Physical Description a. Appearance Switchgear cubicle

b. Dimensions Stack #1 26"x72"x30"

c. Weight Approximately 8000#-each panel

6. Location: Building: Aux. Bldg, Service Intake Structure

Elevation: Aux Bldg. 121', 139' & 155' Service Intake 188'

7. Field Mounting Conditions [ ] Bolt (No.____, Size____)
[X] Weld (Length____)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: F/B: 9 Hz V:

9. a. Functional Description: DC switchgear

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

SS-1102-52

III. Is Equipment Available for Inspection in the Plant: [ ] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by General Electric APPOLO Systems Dept. Report No. 72LSP-1
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only 4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): OBE & SSE RRS - Aux. Bldg. and River Intake Structure

3. Required Acceleration in Each Direction: See FNP response spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [X] sine sweep

2. [X] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other Resonance search, sine sweep (specify)

4. Frequency Range: 5 - 500 Hz

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 0.5g F/B = 0.5g V = 0.5g

7. Laboratory Mounting:

1. [X] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: Acceptable - no structural damage - Equipment remained functional

10. Other tests performed (such as fragility test, including results):_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Southern Co. Services BWR

II. Component Name BATTERIES

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 3DCJ-3 Quantity: 4

3. Vendor: C & D Batteries (Division of ELTRA Corporation)

4. If the component is a cabinet or panel, [illegible]e and model No. of the devices included:

5. Physical Description a. Appearance

b. Dimensions 5-9/32"W x 7-3/8"D x 10-5/16"H

c. Weight 27# each

6. Location: Building: Service Water

Elevation: 188'-9"

7. Field Mounting Conditions in-Rack [ ] Bolt (No.____, Size____)
[ ] Weld (Length____)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: 27 Hz F/B: None below 33 Hz V: None below 33 Hz

9. a. Functional Description: Provide 125V.D.C. Power

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by TTI Testing Laboratories, Inc.
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X] Seismic only 2.[ ] Hydrodynamic only 3.[ ] Explosive only
4.[ ] Other (Specify)_____ 5.[ ] Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction:

S/S = 0.16g (ZPA) F/B = 0.16g (ZPA) V = 0.15g (ZPA)

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [X] sine dwell

2. [ ] Single Axis [X] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other 3 sine dwell tests (specify)

4. Frequency Range: 27HZ,33 Hz

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 1.6g F/B = 1.5g V = 1.3g

7. Laboratory Mounting:

1. [X] Bolt (No. 20, Size ½") [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: no malfunction

10. Other tests performed (such as fragility test, including results):_____
Resonant Frequency Search

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B. Max. Deflection Location Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: SCSI BWR

II. Component Name BATTERY CHARGERS

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 1ARR130AC3 Quantity: 2

3. Vendor: C & D Batteries (Division of ELTRA Corporation)

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance

b. Dimensions 17"W x 14½"D x 12"H

c. Weight 60#

6. Location: Building: Service Water

Elevation: 188'-9"

7. Field Mounting Conditions [X] Bolt (No.____, Size____)
[ ] Weld (Length____)
[ ] ____

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: None below 33 Hz F/B: None below 33 Hz V: None below 33 Hz

9. a. Functional Description: Maintain charge on 125 V.D.C. batteries.

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by TII Testing Laboratories, Inc.
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction:

S/S = 0.16g(ZPA) F/B = 0.16g(ZPA) V = 0.15g(ZPA)

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [X] sine dwell

2. [X] Single Axis [X] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other 3 sine dwell tests (specify)

4. Frequency Range: 27HZ,33 Hz

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 1.6g F/B = 1.5g V = 1.3g

7. Laboratory Mounting:

1. [X] Bolt (No. 8, Size ¼") [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [ ] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: no malfunction

10. Other tests performed (such as fragility test, including results):_____
Resonant Frequency Search

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B. Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: SCSI BWR

II. Component Name BATTERY RACK

1. Scope: [ ] NSSS [X] BOP

2. Model Number: NA Quantity: 2

3. Vendor: C & D Batteries (Division of ELTRA Corporation)

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance

b. Dimensions 3'-0"W x 13 5/8"D x 30 13/16"H

c. Weight 85#

6. Location: Building: Service Water

Elevation: 188'-9"

7. Field Mounting Conditions [X] Bolt (No. 6 , Size 3/8")
[ ] Weld (Length)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: very large F/B: 28.6 Hz V: 56.6 Hz

9. a. Functional Description: support 20 batteries

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: _____

Analysis: X

Combination of Test and Analysis: _____

Test and/or Analysis by Alabama Power Company
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction:

S/S = 0.16g ZPA F/B = 0.15g ZPA V = 0.15g ZPA

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [ ]_____

2. [ ] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range:_____

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = _____ F/B = _____ V = ____

7. Laboratory Mounting:

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [ ] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made:_____

_____

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[X] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [X] 1D

[ ] Finite Element [X] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[X] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: No flexibility in hold down bolts

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

No element significantly stressed.

B. Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: SCSI BWR

II. Component Name DIESEL GENERATOR RELAY PANEL

1. Scope: [ ] NSSS [X] BOP

2. Model Number: Custom Built Quantity: 5

3. Vendor: Wolfe & Mann Manufacturing Company

4. If the component is a cabinet or panel, name and model No. of the devices included: relays CFVB, HFA, HEA, RRX147, 1AV, GFD12, 1HCV, 1AC, 1CW, CEH51A, switch M4

5. Physical Description a. Appearance

b. Dimensions 24"W x 25½"D x 90"H

c. Weight NA

6. Location: Building: Diesel

Elevation: 155'-0"

7. Field Mounting Conditions [X] Bolt (No. 4, Size ½")
[ ] Weld (Length)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):
S/S: No res found in 1-33 Hz F/B: Same as S/S V: Same as S/S

9. a. Functional Description: Diesel Protection

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Wyle Labs Report No. 42613-1
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction:

S/S = 0.2g ZPA F/B = 0.2g ZPA V = 0.13g ZPA

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [X] sine beat [ ]_____

2. [ ] Single Axis [X] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other 7 sine beat tests (specify)

4. Frequency Range: 1.5Hz - 27 Hz

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 0.2g F/B = 0.2g V = 0.13g

7. Laboratory Mounting:

1. [X] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: CFVB relay chattered at 1.5, 2, 4, 5 Hz otherwise structural integrity and performance was demonstrated

10. Other tests performed (such as fragility test, including results): Resonance Frequency Search

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley - Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: SCSI BWR

II. Component Name Relays for Diesel Generators

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 7012 PCL & 7022 PE Quantity: 25

3. Vendor: Agastat

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance

b. Dimensions 3½"W x 3"D x 4½"H

c. Weight 2#

6. Location: Building: Diesel

Elevation: 155'

7. Field Mounting Conditions [X] Bolt (No.____, Size____)
[ ] Weld (Length____)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: NA F/B: V:

9. a. Functional Description: Diesel Control

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Wyle Labs. - Report 43375-1
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction: See FNP response spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [X] Multi-Frequency: [X] random [ ] sine beat [ ]_____

2. [ ] Single Axis [X] Multi-Axis

3. No. of Qualification Tests: OBE 5 Tests at 2/3 fragility Level SSE 1 Full Fragility Test Other _____ (specify)

4. Frequency Range: 0.5 Hz-33Hz

5. TRS enveloping RRS using Multi-Frequency Test [X] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = NA F/B = _____ V = ____

7. Laboratory Mounting:

1. [X] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: No contact chatter greater than 100 msec

10. Other tests performed (such as fragility test, including results): ____ ____
Fragility Test

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

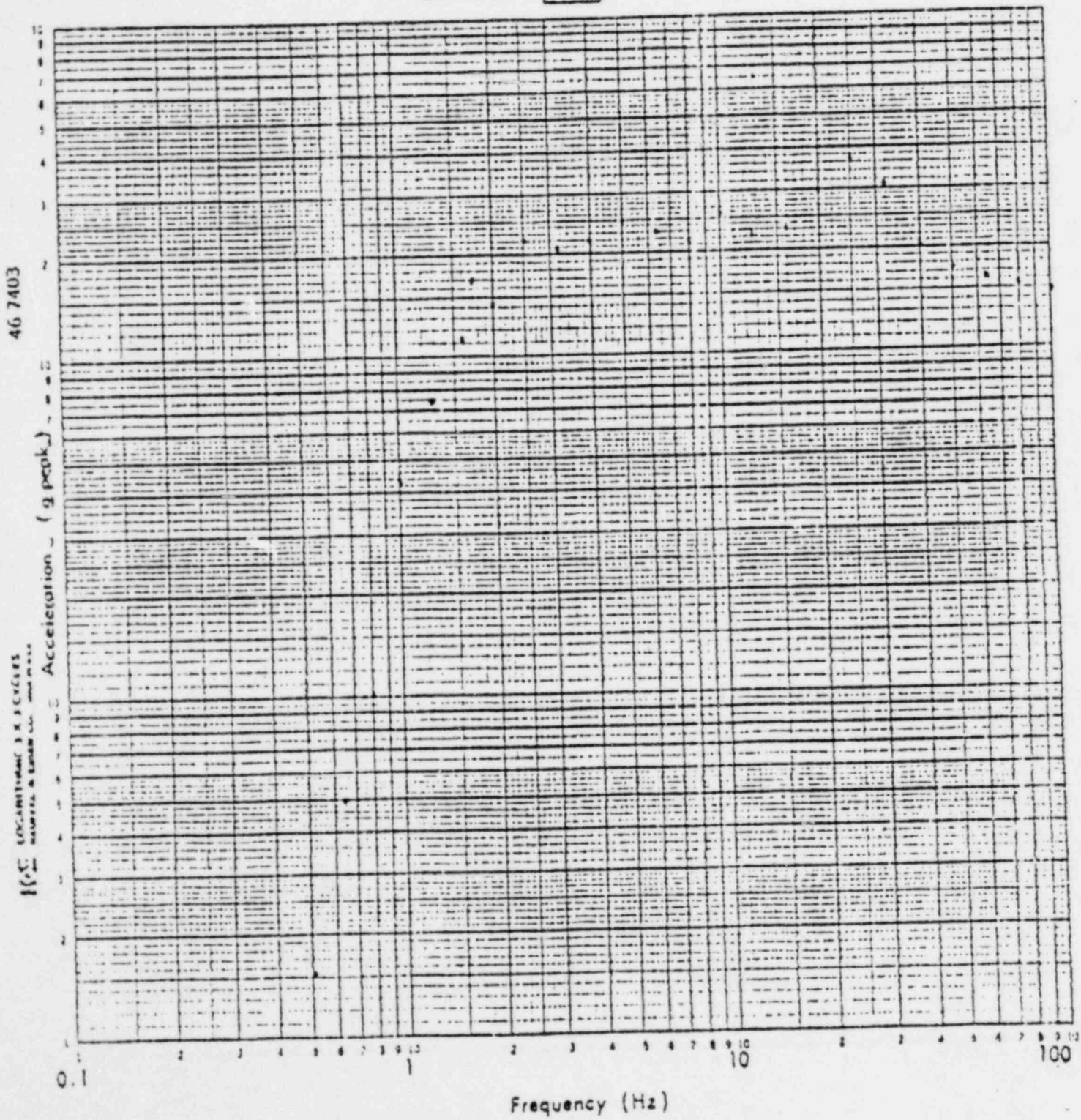
B.

Max. Deflection	Location	Effect Upon Functional Operability

FULL SCALE SHOCK SPECTRUM (g Peak)

1.0 ☐ 10 ☐ 100 ☒ 1000 ☐

DAMPING [2%]



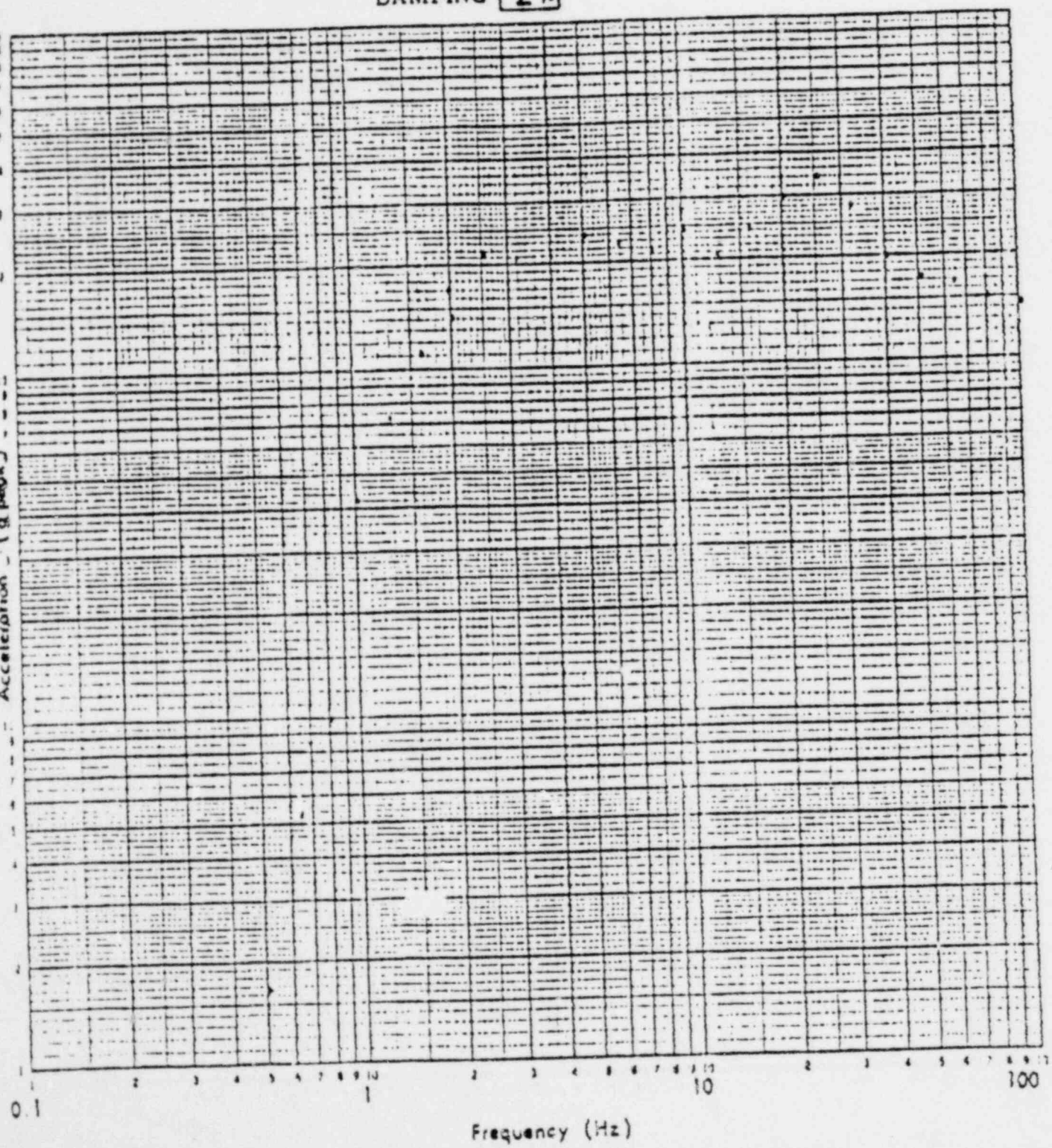
AXIS 2ND SS/V

LOCATION NO. CONTROL

FULL SCALE SHOCK SPECTRUM (g Peak)

1.0 ☐ 10 ☐ 100 ☒ 1000 ☐

DAMPING 2%



AXIS 2ND FB/V

LOCATION NO. CONTROL

FULL SCALE SHOCK SPECTRUM (g Peak)

1.0 ☐ 10 ☐ 100 ☒ 1000 ☐

DAMPING 2%

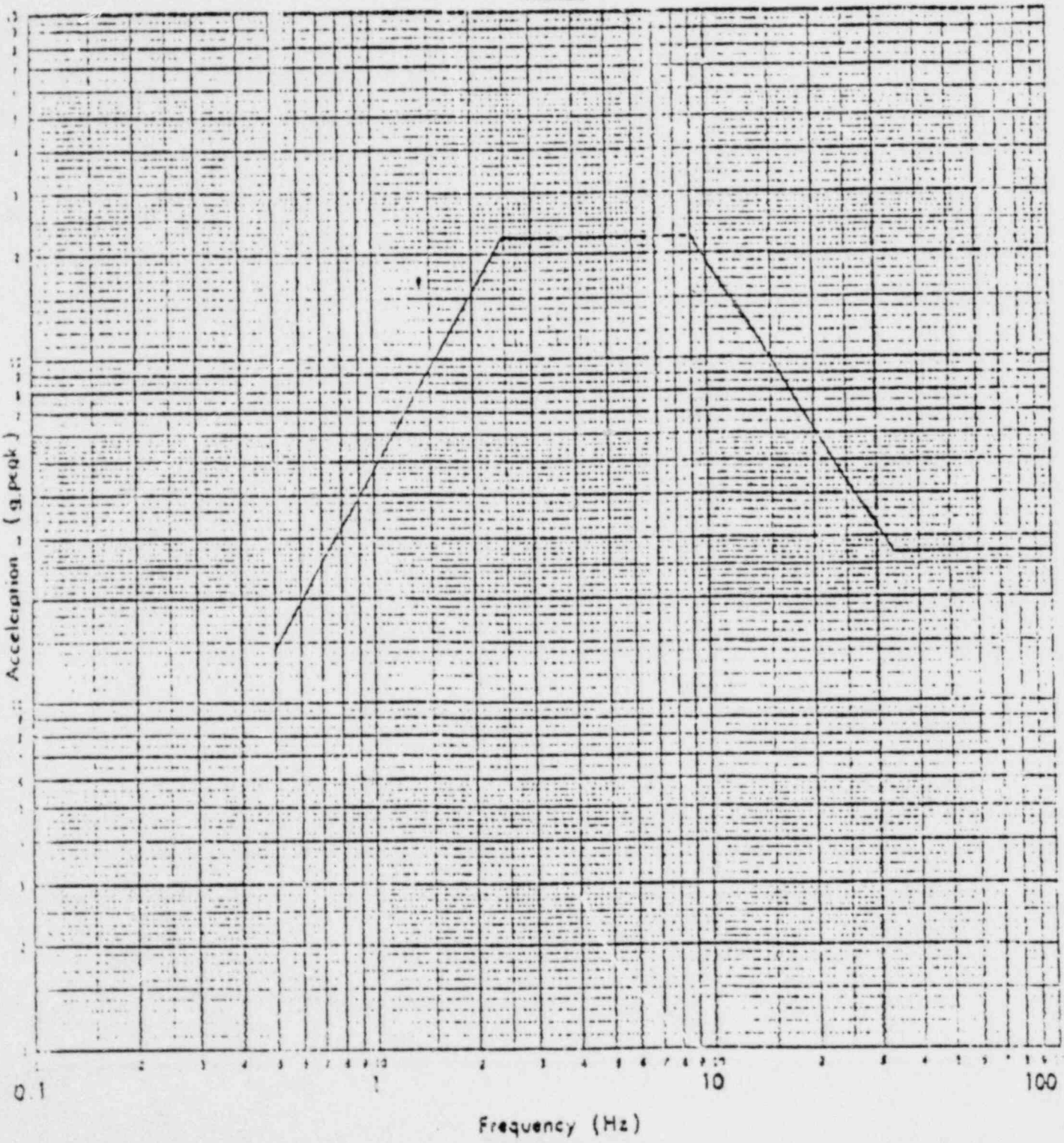


FIGURE 2

REQUIRED RESPONSE SPECTRUM
2% CURVE OF FIGURE 2 OF APPENDIX III MULTIPLIED BY 1.414

Qualification Summary of Equipment

I. Plant Name: J.M. Farley - Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name ESF Equipment Rm. Cooler Thermostats

1. Scope: [ ] NSSS [X] BOP

2. Model Number: TP-8101 Quantity:

3. Vendor: Barber Colman

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Thermostat

b. Dimensions 2"x4"

c. Weight 1-2 lbs.

6. Location: Building: Auxiliary

Elevation: Vary according to elevation (100'-121')

7. Field Mounting Conditions [X] Bolt (No.____, Size____)
[ ] Weld (Length____)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: NA F/B: V:

9. a. Functional Description: Monitor temp and regulate

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications: SS-1102-11

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Donald R. Houser
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See 58-1102-1

3. Required Acceleration in Each Direction. See FNP response spectra

S/S =_____F/B =_____V =_____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [X] sine beat [ ]_____

2. [ ] Single Axis [X] Multi-Axis

3. No. of Qualification Tests: OBE_____SSE_____Other excitation excitation/manually (specify)

4. Frequency Range: 10HZ-60HZ(via magnet exciting) 1HZ-6HZ(via manual exciting)

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = NA F/B = _____ V = ____

7. Laboratory Mounting:

1. [X] Bolt (No. 8-32, Size 4") [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: No modifications; the only occurances where contact switching appeared to occur have been attributed to loose or diswirin test instrumentation.

10. Other tests performed (such as fragility test, including results): NA

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley - Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: SCSI BWR

II. Component Name D.C. Distribution Cabinet

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 18-2-D-93210-4 Quantity: 2

3. Vendor: ITE Imporial Corp.

4. If the component is a cabinet or panel, name and model No. of the devices included: Molded case circuit breakers EH-2-B015

5. Physical Description a. Appearance

b. Dimensions 32"width 65" height 5-3/4 depth

c. Weight NA

6. Location: Building: Service Water

Elevation: 188'9"

7. Field Mounting Conditions [X] Bolt (No.____, Size____)
[ ] Weld (Length____)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: F/B: 12HZ V: No resonance below 33 HZ

9. a. Functional Description: 125 v. D.C. Distribution

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by ITE Imperial Corp. - Report R-STS-6
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction: See FNP response spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [X] Cont. sinusoid

2. [ ] Single Axis [X] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range: 1-26 HZ

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 0.55g F/B = 0.65g V = 0.47g

7. Laboratory Mounting:

1. [X] Bolt (No. 4, Size 3/8") [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: No malfunction

_____

10. Other tests performed (such as fragility test, including results): _____
Resonance Frequency Search

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley - Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name Pressure Transmitter

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 59PM Quantity: 15

3. Vendor: VERITRAK/W

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Aluminum Housing & Terminal Box

b. Dimensions 9"x9"x9"

c. Weight 17 lbs.

6. Location: Building: Auxiliary Building

Elevation: 104' - 140'

7. Field Mounting Conditions [X] Bolt (No. 2 , Size 3/8")
[ ] Weld (Length)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):
No resonances
S/S: Below 35HZ F/B: # S/S V: # S/S

9. a. Functional Description: Consists of measuring cell that converts force into an AC impedance bridge unbalance

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications: SS-1102-86
(Seismic, Class I)

III. Is Equipment Available for Inspection in the Plant: [ ] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Westinghouse Astro Nuclear Lab - Report #SD4050
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction: See FNP response spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [X] sine beat [ ] _____

2. [X] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range: 1.0 to 35.0 HZ

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = .5 to 4.0g F/B = .5 to 4.0g V = .33 to 2.8

7. Laboratory Mounting:

1. [X] Bolt (No. 2, Size 3/8") [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: Performed satisfactorily (mecahnically electrically)

10. Other tests performed (such as fragility test, including results): None
Resonance Frequency Search

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B. Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley - Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name Level Transmitter

1. Scope: [ ] NSSS [X] BOP

2. Model Number: XM-36490 Quantity: 2

3. Vendor: Delaval, Gems Sensor Div.

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Ball Float (captive)

b. Dimensions 24"x12"

c. Weight 50 lbs.

6. Location: Building: Containment

Elevation: 110'

7. Field Mounting Conditions [X] Bolt (No. 8, Size 7/8")
[ ] Weld (Length)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: 18HZ F/B: 12HZ V: No resonance below 33HZ

9. a. Functional Description: Ball Flo c actuates fixed reed switches that provide a linear resistance vs position

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown

[X] Both

10. Pertinent Reference Design Specifications: SS-1102-86

(300°F, 62.1 PSIG, 2×10^3 RADS, Seismic Class I

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Testing Lab Inc. Report
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction: See FNP response spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [X] sine beat [ ] _____

2. [ ] Single Axis [X] Multi-Axis

3. No. of Qualification Tests: OBE_____SSE_____Other Resonance Freq. Search Seismic Dwell Test (specify)

4. Frequency Range: 4 to 33 HZ

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 3.0g F/B = 3.0g V = 2.0g

7. Laboratory Mounting:

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [X] Combination

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: Performed Satisfactorily

10. Other tests performed (such as fragility test, including results): None

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley - Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name Air Operated Globe Valve

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 6" - Globe Cage Trim Quantity: 1

3. Vendor: Hammell - Dahl

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Large Dome Chamber

b. Dimensions 36"

c. Weight 218 lbs.

6. Location: Building: Containment

Elevation: 111'

7. Field Mounting Conditions [ ] Bolt (No.____, Size____)
[X] Weld (Length____)
[ ] _____

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: 27HZ F/B: V:

9. a. Functional Description: Air operated Globe Valve

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications: SS-1102-036

(150 PSIG, 200°F OBE 3G's Horizontal and Vertical

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: ____

Analysis: X

Combination of Test and Analysis: ____

Test and/or Analysis by Hammell - Dahl Report #538
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[ ]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)____ 5.[X]Combination of Gravity, Hydrodynamic

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction:

S/S = 3g F/B = 3g V = 3g

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [ ]____

2. [ ] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE____ SSE____ Other____ (specify)

4. Frequency Range:____

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = ____ F/B = ____ V = ____

7. Laboratory Mounting:

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]____

8. Functional operability verified: [ ] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made:____

____

10. Other tests performed (such as fragility test, including results):____

____

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: _____

Analysis: X

Combination of Test and Analysis: _____

Test and/or Analysis by Hammell - Dahl Report #538
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[ ]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[X]Combination of Gravity, Hydrodynamic

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction:

S/S = 3g F/B = 3g V = 3g

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [ ]_____

2. [ ] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range:_____

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = _____ F/B = _____ V = ____

7. Laboratory Mounting:

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [ ] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made:_____

_____

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[X] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [X] 2D [ ] 1D

[ ] Finite Element [X] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[X] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable
Bonnet Bolting	Bonnet Joint			15,026 PSI	30,000 PSI
Actuator Yoke				4,437 PSI	25,000 PSI
Clamp Nut					

B.

Max. Deflection	Location	Effect Upon Functional Operability
		None

Qualification Summary of Equipment

I. Plant Name: J.M. Farley - Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name Air Operated Globe Valve

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 6" EP 667 Size 80 Quantity: 3

3. Vendor: Fisher Controls

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Large Control Valve

b. Dimensions 73"x25"

c. Weight 1290 lbs.

6. Location: Building: Auxiliary Building

Elevation: 141'

7. Field Mounting Conditions [ ] Bolt (No.____, Size____)
[X] Weld (Length____)
[ ] _____

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: 15HZ F/B: 15HZ V: 15HZ

9. a. Functional Description: Air Operated Globe Valve for main stream pressure relief

b. Is the equipment required for [X] Hot Standby [ ] Cold Shutdown
[ ] Both

10. Pertinent Reference Design Specifications: SS-1102-49
(Seismic Class I)

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: _____

Analysis: X

Combination of Test and Analysis: _____

Test and/or Analysis by Fisher Controls Seismic Certification
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction:

S/S = 3g F/B = 3g V = 3g

VI. If Qualification by Test, then Complete:

1. [ ] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [ ]_____

2. [ ] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____SSE_____Other_____
(specify)

4. Frequency Range:_____

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = _____ F/B = _____ V = ____

7. Laboratory Mounting:

1. [ ] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [ ] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made:_____

_____

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[X] Dynamic Analysis: [ ] Time-History
[X] Response Spectrum

3. Model Type: [X] 3D [ ] 2D [ ] 1D

[X] Finite Element [ ] Beam [ ] Closed Form Solution

4. [X] Computer Codes: Seismic 3

Frequency Range and No. of modes considered: NA

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [X] SRSS
[ ] Other: _____ (specify)

6. Damping: NA Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable
Yoke Leg				19,683 PSI	26,250 PSI
Bonnet				10,986.9 PSI	26,250 PSI

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley - Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name Solenoid Valves

1. Scope: [ ] NSSS [X] BOP

2. Model Number: HT8320A108V Quantity: 2

3. Vendor: Automatic Switch Co.

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Brass 3 Port Body, Topmounted Col

b. Dimensions 2"Lx4"Hx2'W

c. Weight 1½ lbs.

6. Location: Building: River Water Structure

Elevation: 104'-0"

7. Field Mounting Conditions [X] Bolt (No.____, Size____)
[ ] Weld (Length____)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: F/B: V:

9. a. Functional Description: On low air pressure from compressor, valve switches over to nitrogen bottle.

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Automatic Switch Co. Report #1357 · 7/20/72
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction: See FNP response spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [ ] NA

2. [X] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range: Minimum 20 HZ

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = _____ F/B = _____ V = _____

7. Laboratory Mounting: 4.3g to 6.0g

1. [X] Bolt (No._____, Size_____) [ ] Weld (Length_____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: Valves did not malfunction after g-load was applied

10. Other tests performed (such as fragility test, including results):_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley - Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name River Water Level Transmitter

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 1152DP6A22PB Quantity: 2

3. Vendor: Rosemont Engineering Co.

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Flanges & Capsule on bottom, electronic on top

b. Dimensions 4½"Wx9"Hx4½"D

c. Weight 12 lbs.

6. Location: Building: Roof - River Water Structure

Elevation: 130'-9'

7. Field Mounting Conditions [X] Bolt (No.____, Size____)
[ ] Weld (Length____)
[ ]

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: 24HZ F/B: 26HZ V: 68HZ

9. a. Functional Description: Senses River level on back pressure in bubble tube, send signal to control room

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown [X] Both

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Rosemount Inc. RMT - 117145
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction: See FNP response spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [X] Sine dwell

2. [X] Single Axis [ ] multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other 8 sine dwell tests (specify)

4. Frequency Range: 22HZ - 78HZ

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 3g F/B = 3g V = 3g

7. Laboratory Mounting:

1. [X] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: Resonance found with panel mounting basket, no significant change in transmitter out put

10. Other tests performed (such as fragility test, including results):_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley - Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name Pressure Switch (Used for Level Alarms)

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 604GZ1 Quantity: 2

3. Vendor: Custom Componet Switches, Inc.

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Rectangular Aluminum Box with Pressport and Conduit Conn.

b. Dimensions 4½"Wx6½"Hx2-3/4"D

c. Weight 24 ounces

6. Location: Building: Mounted on Roof Service Water Structure

Elevation: 206'6"

7. Field Mounting Conditions [X] Bolt (No.____, Size____)
[ ] Weld (Length____)
[ ] _____

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):
No resonant frequencies
S/S: found 5-150HZ F/B: #S/S V: #S/S

9. a. Functional Description: Switch gives alarm on low pond level

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

II. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Custom Components Sw. Inc, QTR604GCJR05155-01
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction: See FNP response spectra

S/S =_____ F/B =_____ V =_____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [X] continuous sine

2. [X] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range: 5-150-5HZ

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 0.64g to 3g F/B = 0.64g to 3g V = 0.64g to 3g

7. Laboratory Mounting:

1. [X] Bolt (No._____, Size_____) [ ] Weld (Length_____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: No electrical contact chatter, premature activation, or resonant frequencies observed

10. Other tests performed (such as fragility test, including results):_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B. Max. Deflection Location Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley -Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name Float Type Level Switch

1. Scope: [ ] NSSS [X] BOP

2. Model Number: Series SL-200 Ass. No. 83842-A2 Quantity: 10

3. Vendor: Robertshaw Controls Co. - Levelac Level Switches

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Cast Float Housing & Explosion Proof Switch Assembly

b. Dimensions 7"Wx19"Hx7"D

c. Weight 35 lbs.

6. Location: Building: Diesel Building - Engine Rooms & Oil Storage Rooms

Elevation: 155'-0"

7. Field Mounting Conditions [ ] Bolt (No.____, Size____)
[ ] Weld (Length____)
[X] Bolted to Field FAB. Seismic Bracket

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical): no resonance
S/S: 5 - 33HZ F/B: #S/S V: #S/S

9. a. Functional Description: Switch gives alarm on rising level in room located

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown [X] Both

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Ogden Technology Lab, Inc. Job #70682
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction: See FNP response spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [X] continuous sine

2. [X] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range: 5-33 HZ

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 1.5→ 5.0g F/B = 1.5 → 5.0g V = 1.5 → 5.0g, 0.5g

7. Laboratory Mounting:

1. [X] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: Switch chattered on No. 1 sw., no chatter on No. 2 sw (Switch chatter = electrical discontinuity) except at 33HZ from 2.0g to 5.0g.

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley - Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name Pressure Switch

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 604GZM1 Quantity: 2

3. Vendor: Custom Component Switches Inc.

4. If the component is a cabinet or panel, name and model No. of the devices included:

5. Physical Description a. Appearance Rectangular Aluminum box with Pressport & conduit conn.

b. Dimensions 4½"Wx6½"Hx2-3/4"D

c. Weight 24 ounces

6. Location: Building: Inside Service Water Intake Structure

Elevation: 191'-0"

7. Field Mounting Conditions [X] Bolt (No.____, Size____)
[ ] Weld (Length____)
[ ] ____

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):
No resonant frequencies
S/S: found 5 → 150 HZ F/B: #S/S V: #S/S

9. a. Functional Description: On low air pressure, switch gives alarm and switch over signal to solenoid valve to apply N2 back-up supply.

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Custom Component Sw. Inc., QTR604GCJR05155-01
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction: See FNP response spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [X] continuous sine

2. [X] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range: 5-150-5 HZ

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 0.64g to 3g F/B = 0.64g to 3g V = 0.64g to 3g

7. Laboratory Mounting:

1. [X] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: No electrical contact chatter, premature actuation, or resonant frequencies observed.

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A.

Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B.

Max. Deflection	Location	Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley - Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name Power Supply

1. Scope: [ ] NSSS [X] BOP

2. Model Number: N11048 Quantity: 2

3. Vendor: North Electric Co.

4. If the component is a cabinet or panel, name and model No. of the devices included: N/A

5. Physical Description a. Appearance Ventilated sheet metal housing

b. Dimensions 3¼"x5"x6½"

c. Weight 7 lbs.

6. Location: Building: Control Room (Aux. Bldg.)

Elevation: 157-6"

7. Field Mounting Conditions [X] Bolt (No.____, Size____)
[ ] Weld (Length____)
[ ] ____

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):
S/S: No resonance between 5-20HZ F/B: #S/S V: #S/S

9. a. Functional Description: Power Supply for level and temperature Instrument loops

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by North Electric Co. 662-1780-19611
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction: See FNP response spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [X] continuous sweep

2. [X] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other_____ (specify)

4. Frequency Range: 15 to 55 HZ

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S =0.172g to 2.32g F/B = # S/S V = # S/S

7. Laboratory Mounting:

a. [X] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: Power Supplies performed satisfactorily before, during and after all tests.

10. Other tests performed (such as fragility test, including results): Shock, temp. shock, and humidity.

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B. Max. Deflection Location Effect Upon Functional Operability

Qualification Summary of Equipment

I. Plant Name: J.M. Farley Unit 2 Type:

1. Utility: Alabama Power Company PWR X

2. NSSS: Westinghouse 3. A/E: Bechtel BWR

II. Component Name DIFFERENTIAL PRESSURE SWITCHES

1. Scope: [ ] NSSS [X] BOP

2. Model Number: 288A Quantity: 2

3. Vendor: Barton Instrument Corporation

4. If the component is a cabinet or panel, name and model No. of the devices included: N/A

5. Physical Description a. Appearance Dial & Switches Front, Cell on Back

b. Dimensions 7½"W x 7½"H x 5⅛"D

c. Weight 8 lbs.

6. Location: Building: River Water Structure

Elevation: 106'-6"

7. Field Mounting Conditions [ ] Bolt (No.____, Size____)
[ ] Weld (Length____)
[X] Bolt on Seismic Mount (Field Fab)

8. Natural Frequencies in Each Direction (Side/Side, Front/Back, Vertical):

S/S: 38 Hz F/B: no resonance for range of frequency 1-60Hz V: # F/B

9. a. Functional Description: Switch Alarms on Decreasing ΔP across lube water piping

b. Is the equipment required for [ ] Hot Standby [ ] Cold Shutdown
[X] Both

10. Pertinent Reference Design Specifications:

III. Is Equipment Available for Inspection in the Plant: [X] Yes [ ] No

IV. Equipment Qualification Method: Test: X

Analysis: _____

Combination of Test and Analysis: _____

Test and/or Analysis by Wyle Lab 53178
(name of Company or Laboratory & Report No.)

V. Vibration Input:

1. Loads considered: 1.[X]Seismic only 2.[ ]Hydrodynamic only 3.[ ]Explosive only
4.[ ]Other (Specify)_____ 5.[ ]Combination of_____

2. Required Response Spectra (attach the graphs): See FNP response spectra

3. Required Acceleration in Each Direction: See FNP response spectra

S/S = _____ F/B = _____ V = _____

VI. If Qualification by Test, then Complete:

1. [X] Single Frequency [ ] Multi-Frequency: [ ] random [ ] sine beat [X] sine dwell

2. [X] Single Axis [ ] Multi-Axis

3. No. of Qualification Tests: OBE_____ SSE_____ Other 11 sine dwell tests (specify)

4. Frequency Range: 10HZ to 58HZ

5. TRS enveloping RRS using Multi-Frequency Test [ ] Yes (Attach TRS & RRS graphs) [ ] No

6. Input g-level Test at S/S = 3g F/B = 3g V = 2g

7. Laboratory Mounting:

1. [X] Bolt (No.____, Size____) [ ] Weld (Length____) [ ]_____

8. Functional operability verified: [X] Yes [ ] No [ ] Not Applicable

9. Test Results including modifications made: No resonances detected in Sw.#1, Sw.#2 detected resonance in X-axis at 29HZ, 39HZ, and 58HZ. SW#2 relay had chatter at sine dwell at 38HZ with 3g input.

10. Other tests performed (such as fragility test, including results):_____

_____

VII. If Qualification by Analysis or by the Combination of Test and Analysis, then Complete:

1. Description of Test including Results: _____

_____

_____

2. Method of Analysis:

[ ] Static Analysis [ ] Equivalent Static Analysis

[ ] Dynamic Analysis: [ ] Time-History
[ ] Response Spectrum

3. Model Type: [ ] 3D [ ] 2D [ ] 1D

[ ] Finite Element [ ] Beam [ ] Closed Form Solution

4. [ ] Computer Codes: _____

Frequency Range and No. of modes considered: _____

[ ] Hand Calculations

5. Method of Combining Dynamic Responses: [ ] Absolute Sum [ ] SRSS
[ ] Other: _____ (specify)

6. Damping: _____ Basis for the damping used: _____

7. Support Considerations in the model: _____

8. Critical Structural Elements:

A. Identification	Location	Governing Load or Response Combination	Seismic Stress	Total Stress	Stress Allowable

B. Max. Deflection	Location	Effect Upon Functional Operability