

ATTACHMENT 2

REPLACEMENT PAGES

INSTRUCTIONS FOR INSERTING REPLACEMENT PAGES:

REMOVE PAGE:

3.19-5
4.1-9
4.1-9a

INSERT PAGE:

3.19-5
4.1-9
4.1-9a

9804270074 980417
PDR ADOCK 05000269
P PDR

respectively. Other instrumentation is provided to monitor proper operation of the ESV System, but is not required for ESV System operability.

Surveillance testing for the ECCW, ESV, and SSW systems is conducted by performing tests listed in Table 4.1-2. The Emergency Condenser Circulating Water System test is conducted every 18 months. This test verifies that air in-leakage to the ECCW siphon headers will not exceed ESV pump capability.

The Essential Siphon Vacuum System Test is performed quarterly to verify adequate performance of the ESV system. This includes a functional test to ensure the ESV float valves are capable of opening, a test of the ESV pumps performance, a test of ESV Pumps to ensure that they can be automatically restarted upon restoration of emergency power after a loss of off-site power, and a test of active valves which support operability of the ESV System.

Applicability of this Specification as described above for each Oconee unit will begin following completion of the Service Water upgrades on the respective unit. The Service Water upgrade is scheduled for completion in the Unit 2 EOC 16 refueling outage, in the Unit 3 EOC 17 refueling outage, and in the Unit 1 EOC 18 refueling outage.

Table 4.1-2
MINIMUM EQUIPMENT TEST FREQUENCY

<u>Item</u>	<u>Test</u>	<u>Frequency</u>
1. Control Rod Movement ⁽¹⁾	Movement of Each Rod	Monthly
2. Pressurizer Safety Valves	Setpoint	18 months ⁽⁴⁾
3. Main Steam Safety Valves	Setpoint	18 months ⁽⁴⁾
4. Refueling System Interlocks ⁽⁵⁾	Functional	Prior to Refueling
5. Main Steam Stop Valves ⁽¹⁾	Movement of Each Stop Valve	Monthly
6. Reactor Coolant System ⁽²⁾ Leakage	Evaluate	Daily
7. Emergency Condenser ⁽⁶⁾ Circulating Water System Test	Functional	18 months
8. High Pressure Service Water Pumps and Power Supplies	Functional	Monthly
9. Spent Fuel Cooling System	Functional	Prior to Refueling
10. High Pressure and Low ⁽³⁾ Pressure Injection System	Vent Pump Casings	Monthly and Prior to Testing
11. Emergency Feedwater Pump Automatic Start and Automatic Valve Actuation Feature	Functional	18 months
12. (Reserved)		
13. Essential Siphon Vacuum ⁽⁸⁾ System Test	Functional	Quarterly

Oconee 1, 2, and 3

4.1-9

Amendment No. _____ (Unit 1)

Amendment No. _____ (Unit 2)

Amendment No. _____ (Unit 3)

- (1) Applicable only when the reactor is critical.
- (2) Applicable only when the reactor coolant is above 200°F and at a steady-state temperature and pressure.
- (3) Operating pumps excluded.
- (4) Number of safety valves to be tested every 18 months shall be in accordance with ASME Codes Section XI, Article IWV-3511, such that each valve is tested at least once every 5 years.
- (5) Applicable only to the interlocks associated with the Reactor Building Purge System.
- (6) Verification of the Emergency Condenser Circulating Water (ECCW) System function to supply siphon suction to the Low Pressure Service Water System shall be performed to ensure operability of the LPSW System.
- (7) (Reserved)
- (8) Applicability of these surveillances for each Oconee unit will begin following completion of the Service Water upgrade on the respective unit.

ATTACHMENT 3

SCREENING EVALUATION WORK SHEET FORMS

SCREENING EVALUATION WORK SHEET (SEWS)

Revision 2, Corrected, 6/28/91
 Status Y N U
 Sheet 1 of _____
 Rev. 2

Equip. ID No. 2ESVPU0001 Equip. Class 05 - Horizontal Pumps

Equipment Description Essential Siphon Vacuum Pump No.1

Location: Bldg. ESV Floor El. 796'+6" Room, Row/Col _____

Manufacturer, Model, Etc. (optional) Seimens 2BE1152

Horsepower/Motor Rating (opt.) 25 RPM (opt.) _____ Head (opt.) _____ Flow Rate (opt.) _____

SEISMIC CAPACITY VS DEMAND

- | | |
|--|----------------|
| 1. Elevation where equipment receives seismic input | <u>796'+6"</u> |
| 2. Elevation of seismic input below about 40' from grade | [Y] N U |
| 3. Equipment has fundamental frequency above about 8 Hz | [Y] N U N/A |
| 4. Capacity based on: Existing Documentation | DOC |
| Bounding Spectrum | [BS] |
| 1.5 x Bounding Spectrum | ABS |
| GERS | GERS |
| 5. Demand based on: Ground Response Spectrum | [GRS] |
| 1.5 x Ground Response Spectrum | AGRS |
| Conserv. Des. In-Str. Resp. Spec. | CRS |
| Realistic M-Ctr. In-Str. Resp. Spec. | RRS |

Does capacity exceed demand? [Y] N U *

CAVEATS - BOUNDING SPECTRUM (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below)

- | | |
|---|---------------|
| 1. Equipment is included in earthquake experience equipment class | [Y] N U N/A * |
| 2. Driver and pump connected by rigid base or skid | [Y] N U N/A * |
| 3. No indication that shaft does not have thrust restraint in both axial directions | [Y] N U N/A * |
| 4. No risk of excessive nozzle loads such as gross pipe motion or differential displacement | [Y] N U N/A * |
| 5. Base vibration isolators adequate for seismic loads | Y N U [N/A] |
| 6. Attached lines (cooling, air, electrical) have adequate flexibility | [Y] N U N/A * |
| 7. Anchorage adequate (See checklist below for details) | [Y] N U N/A |
| 8. Relays mounted on equipment evaluated | Y N U [N/A] * |
| 9. Have you looked for and found no other adverse concerns? | [Y] N U N/A |

Is the intent of all the caveats met for Bounding Spectrum? [Y] N U N/A

ANCHORAGE

- | | |
|---|---------------|
| 1. Appropriate equipment characteristics determined (mass, CG, natural freq., damping, center of rotation) | [Y] N U N/A |
| 2. Type of anchorage covered by GIP | [Y] N U N/A * |
| 3. Sizes and locations of anchors determined | [Y] N U N/A |
| 4. Adequacy of anchorage installation evaluated (weld quality and length, nuts and washers, expansion anchor tightness, etc.) | [Y] N U N/A |

*Attachment 3
 Page 1 of 12*

SCREENING EVALUATION WORK SHEET (SEWS)

Equip. ID No. 2ESVPU0001 Equip. Class 05 - Horizontal Pumps

Equipment Description Essential Siphon Vacuum Pump No.1

ANCHORAGE (Cont'd)

- | | | | | |
|--|-----|---|---|-----------|
| 5. Factors affecting anchorage capacity or margin of safety considered: embedment length, anchor spacing, free-edge distance, concrete strength/condition, and concrete cracking | [Y] | N | U | N/A |
| 6. For bolted anchorages, gap under base less than 1/4-inch | Y | N | U | [N/A] * |
| 7. Factors affecting essential relays considered: gap under base, capacity reduction for expansion anchors | [Y] | N | U | N/A |
| 8. Base has adequate stiffness and effect of prying action on anchors considered | [Y] | N | U | N/A |
| 9. Strength of equipment base and load path to CG adequate | [Y] | N | U | N/A |
| 10. Embedded steel, grout pad or large concrete pad adequacy evaluated | [Y] | N | U | N/A |
| Are anchorage requirements met? | | | | [Y] N U * |

INTERACTION EFFECTS

- | | | | | |
|---|-----|---|---|-----------|
| 1. Soft targets free from impact by nearby equipment or structures | [Y] | N | U | N/A |
| 2. If equipment contains sensitive relays, equipment free from all impact by nearby equipment or structures | Y | N | U | [N/A] |
| 3. Attached lines have adequate flexibility | [Y] | N | U | N/A |
| 4. Overhead equipment or distribution systems are not likely to collapse | [Y] | N | U | N/A |
| 5. Have you looked for and found no other adverse concerns? | [Y] | N | U | N/A |
| Is equipment free of interaction effects? | | | | [Y] N U * |

IS EQUIPMENT SEISMICALLY ADEQUATE [Y] N U

COMMENTS

The ESV pumps are not required to function during a seismic event per system engineer Henry Harling, therefore relay chatter is not a concern. Pumps are seismically adequate pending final walkdown for interaction. Rev.2: Final walkdown reveals no interaction concerns.

COMMENTS FROM SEISMIC CAPACITY VS DEMAND

Does capacity exceed demand? Ground Response for .15g Overburden Spectra is fully enveloped by the Bounding Spectrum

COMMENTS OF CAVEATS - BOUNDING SPECTRUM

1

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Design Difference Evaluation:

The ESV pumps are a double suction, horizontal, centrifugal pump rated at 25 HP. The Siemens design uses flat port plates which have much more clearance than the cone plate designs of manufacturers such as Nash. The use of these flat plates will not introduce any seismic vulnerability concerns.

The motor and frame are mounted on a common skid located in the ESV Bldg. Total weight for the Pump + motor + frame is 1100 lbs.

The ESV pumps are similar in size and layout to the pumps shown in Figure 5-4 of EPRI-7149-D, "Summary of Seismic Adequacy of Twenty Classes of Equipment Required for Safe Shutdown of Nuclear plants" Per EPRI-7149-D page 5-4, there were four sites which experience seismic damage to horizontal pumps that affected functionality. The primary cause of these failures were differential displacements between the pump and connected components or poorly supported piping adjacent to the pump. The piping associated with the ESV pumps has been rigorously analyzed and supported for seismic loads. The pump and motor are on a common skid located on a continuous foundation pad. No hard spots with adjacent equipment exist.

2 The driver and pump are on a common skid which will bolt to a steel and concrete pedestal and grouted underneath. Ref. TN//5/A/3000/0/CM3

3 Thrust bearings are provided (multiple radial/thrust combination)

4 Reference piping analysis OSC-6817 prob. 4-ESV-03

6 The sealing water line to the pump is seismically qualified in OSC-6648 (Piping analysis for Siphon seal water system in the ESV Building, Prob. 4-SSW-04). The electrical lines will be installed per SI/O/A/5120/002 WHICH REQUIRES A MINIMUM OF 8" SLACK (Sect. 3.1.8.A.1) Rev.2: Installed lines have adequate slack.

8 No relays are mounted on the pump

COMMENTS OF ANCHORAGE

2 Anchorage supplied by 3/4" Dia. embedded studs with 3/4" thick, 3 1/4" dia. heads.

6 The base anchorage will be grouted as directed by installation procedure

TN//5/A/3000/0/CM3

Are anchorage requirement met? Reference anchorage calculation OSC-6564 for anchorage qualification.

COMMENTS OF INTERACTION EFFECTS

Is equipment free of interaction effects? The ESV vacuum pumps are installed in the ESV building. The building is designed to QA4 standards and is seismically qualified. No interaction concerns were noted. Final walkdown to be performed prior to start up. Rev. 2: Final walkdown reveals no interaction concerns.

SCREENING EVALUATION WORK SHEET (SEWS)

Equip. ID No. 2ESVPU0001 Equip. Class 05 - Horizontal Pumps

Equipment Description Essential Siphon Vacuum Pump No.1

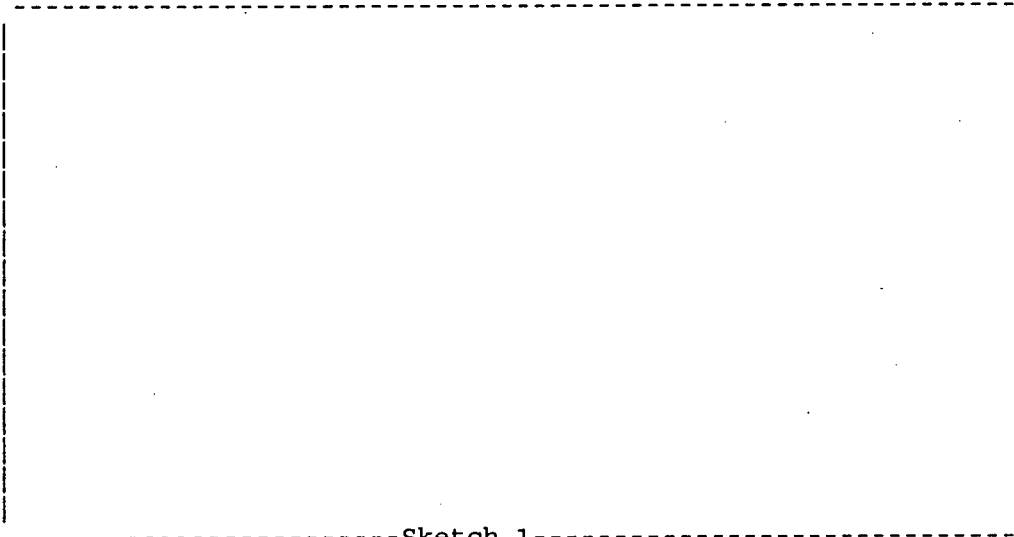
Evaluated by:

Remell Childs 4/16/98

Date: 04/15/98

R. Brent Elmer 4/16/98

Date: 04/15/98



-----Sketch 1-----

SCREENING EVALUATION WORK SHEET (SEWS)

Revision 2, Corrected, 6/28/91
 Status Y N U
 Sheet 1 of _____
 Rev. 1

Equip. ID No. 2ESVLCP1 Equip. Class 20 - Instr. & Control Panels & Cabinets

Equipment Description Essential Siphon Vacuum Local Control Panel Cabinet No.1

Location: Bldg. ESV Floor El. 796'+6" Room, Row/Col _____

Manufacturer, Model, Etc. (optional) Hoffman A-727224FSD

SEISMIC CAPACITY VS DEMAND

- | | | |
|----|---|----------------|
| 1. | Elevation where equipment receives seismic input | <u>796'+6"</u> |
| 2. | Elevation of seismic input below about 40' from grade | [Y] N U |
| 3. | Equipment has fundamental frequency above about 8 Hz | Y [N] U N/A * |
| 4. | Capacity based on: Existing Documentation | DOC |
| | Bounding Spectrum | [BS] |
| | 1.5 x Bounding Spectrum | ABS |
| | GERS | GERS |
| 5. | Demand based on: Ground Response Spectrum | [GRS] |
| | 1.5 x Ground Response Spectrum | AGRS |
| | Conserv. Des. In-Str. Resp. Spec. | CRS |
| | Realistic M-Ctr. In-Str. Resp. Spec. | RRS |

Does capacity exceed demand? [Y] N U *

CAVEATS - BOUNDING SPECTRUM (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below)

- | | | |
|-----|---|---------------|
| 1. | Equipment is included in earthquake experience equipment class | [Y] N U N/A * |
| 2. | No computers or programmable controllers | [Y] N U N/A * |
| 3. | No strip chart recorders | [Y] N U N/A |
| 4. | Steel frame and sheet metal structurally adequate | [Y] N U N/A |
| 5. | Adjacent cabinets or panels which are close enough to impact, or sections of multi-bay cabinets or panels, are bolted together if they contain essential relays | Y N U [N/A] * |
| 6. | Drawers and equipment on slides restrained from falling out | Y N U [N/A] * |
| 7. | All doors secured by latch or fastener | [Y] N U N/A |
| 8. | Attached lines have adequate flexibility | [Y] N U N/A |
| 9. | Anchorage adequate (See checklist below for details) | [Y] N U N/A |
| 10. | Relays mounted on equipment evaluated | [Y] N U N/A * |
| 11. | Have you looked for and found no other adverse concerns? | [Y] N U N/A |
- Is the intent of all the caveats met for Bounding Spectrum? [Y] N U N/A

ANCHORAGE

- | | | |
|----|---|---------------|
| 1. | Appropriate equipment characteristics determined (mass, CG, natural freq., damping, center of rotation) | [Y] N U N/A |
| 2. | Type of anchorage covered by GIP | [Y] N U N/A * |
| 3. | Sizes and locations of anchors determined | [Y] N U N/A |

*Attachment 3
 page 5 of 12*

SCREENING EVALUATION WORK SHEET (SEWS)

Equip. ID No. 2ESVLCPI Equip. Class 20 - Instr. & Control Panels & Cabinets

Equipment Description Essential Siphon Vacuum Local Control Panel Cabinet No.1

ANCHORAGE (Cont'd)

- | | |
|--|---------------|
| 4. Adequacy of anchorage installation evaluated (weld quality and length, nuts and washers, expansion anchor tightness, etc.) | [Y] N U N/A * |
| 5. Factors affecting anchorage capacity or margin of safety considered: embedment length, anchor spacing, free-edge distance, concrete strength/condition, and concrete cracking | [Y] N U N/A |
| 6. For bolted anchorages, gap under base less than 1/4-inch | [Y] N U N/A |
| 7. Factors affecting essential relays considered: gap under base, capacity reduction for expansion anchors | [Y] N U N/A |
| 8. Base has adequate stiffness and effect of prying action on anchors considered | [Y] N U N/A * |
| 9. Strength of equipment base and load path to CG adequate | [Y] N U N/A |
| 10. Embedded steel, grout pad or large concrete pad adequacy evaluated | Y N U [N/A] |
| Are anchorage requirements met? | [Y] N U N/A * |

INTERACTION EFFECTS

- | | |
|---|-------------|
| 1. Soft targets free from impact by nearby equipment or structures | [Y] N U N/A |
| 2. If equipment contains sensitive relays, equipment free from all impact by nearby equipment or structures | [Y] N U N/A |
| 3. Attached lines have adequate flexibility | [Y] N U N/A |
| 4. Overhead equipment or distribution systems are not likely to collapse | [Y] N U N/A |
| 5. Have you looked for and found no other adverse concerns? | [Y] N U N/A |
| Is equipment free of interaction effects? | [Y] N U * |

IS EQUIPMENT SEISMICALLY ADEQUATE

[Y] N U

COMMENTS

Cabinet is seismically adequate pending acceptable interaction and internal component mounting walkdown. Rev.1: Final walkdown reveals that all relays are present and properly mounted and no interaction concerns. All relays are assumed to be essential unless noted otherwise.

COMMENTS FROM SEISMIC CAPACITY VS DEMAND

3 Assumed to be < 8 Hz.
 Does capacity exceed demand? Demand based on overburden ground response.

COMMENTS OF CAVEATS - BOUNDING SPECTRUM

1

*Attachment 3
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Design Differences Evaluation:

Cabinets are Hoffman A-727224FSD. The new cabinets were compared to similar existing Hoffman cabinets at Oconee and the 1997 Hoffman catalog was compared to the October 1976 Hoffman catalog. Both new and old cabinets are made of 12 gauge steel, all seams are continuously welded and there are no holes or knockouts. All door hinges and internal frame structures were found to be identical. Both new and existing doors have 3 point latching door handles. These cabinets were found to be identical in construction to existing Hoffman cabinets.

The structural load path of Hoffman type enclosures is similar to that shown for Enclosed Switchboards in Fig. 20-2 of EPRI NP-7149-D. Overall construction of the Hoffman cabinets is judged to be equivalent to typical Control and Instrumentation Panels & Cabinets represented in the earthquake experience database.

All internals were not present at inspection. Final inspection to be performed prior cabinet being declared operational. Rev .1 addresses final inspection. All components were present and properly mounted.

2 Rev 1: 2 programable Controllers, PC1(ON2ESVPC0001A) & PC2(ON2ESVPC0001B) are mounted in this cabinet. They are GE/FANUC 90-30 PLC's. The PLC's are not required to function during or after a seismic event. There are no consequences to either spurious actuation or non-actuation. Therefore no seismic capacity evaluation is required for the PLC's. Both are well mounted inside the cabinet and will remain in place following a seismic event. The PLC's will not adversely affect the function of the cabinet or it's other internal components.

5 Adjacent ESLCP panels are 12" away .

6 There are no drawers or equipment on slides in the cabinets

10 All internal components required to function either during or after a seismic event have been evaluated to IEEE 344-075 standards. Field mounting of relays to be inspected prior to start up of system. Rev. 1: Final walkdown reveals that all relays are present and properly mounted.

COMMENTS OF ANCHORAGE

2 Anchored with 12 HN 1230 sleeve anchors.

4 Anchors were installed per QA procedure MP/0/A/1800/35.

8 Bottom of cabinet is stiffened with inverted channel. Bottom of cabinet is sandwiched between back of channel web and floor. This effectively stiffens the base of the cabinet.

Are anchorage requirements met? See calculation in OSC-6040.

COMMENTS OF INTERACTION EFFECTS

Is equipment free of interaction effects? Cabinet must be walked for interaction prior to putting into service. All adjacent equipment may not have been installed. Rev. 1: Final walkdown reveals no interaction concerns.

Attachment 3
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SCREENING EVALUATION WORK SHEET (SEWS)

Equip. ID No. 2ESVLCPI Equip. Class 20 - Instr. & Control Panels & Cabinets

Equipment Description Essential Siphon Vacuum Local Control Panel Cabinet No.1

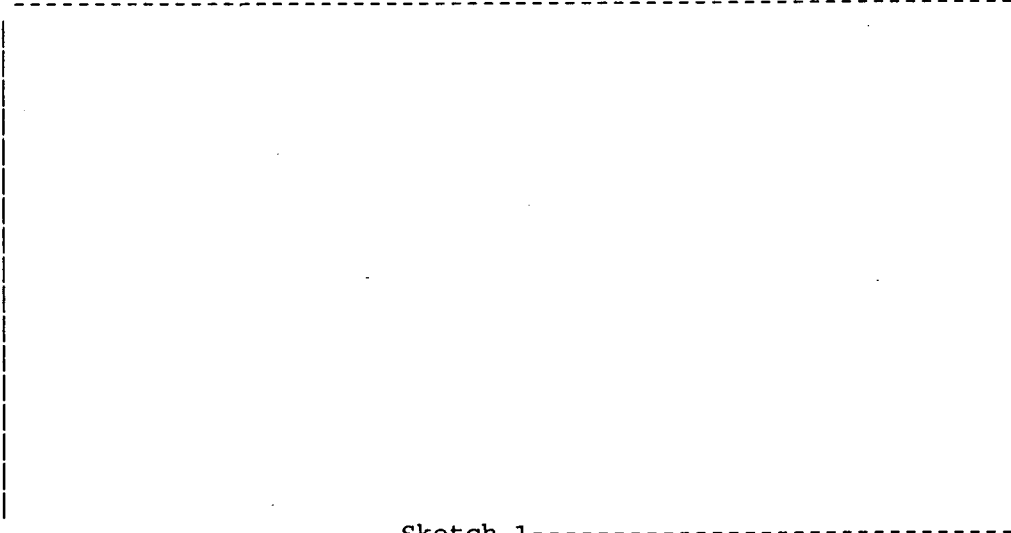
Evaluated by:

Remell Chitt 4/16/98

Date: 04/01/98

L Brent EL 4/16/98

Date: 04/01/98



-----Sketch 1-----

Attachment 3
page 8 of 12

SCREENING EVALUATION WORK SHEET (SEWS)

Revision 2, Corrected, 6/28/91
Status Y N U
Sheet 1 of _____
Rev. 1

Equip. ID No. 2ESV1 Equip. Class 20 - Instr. & Control Panels & Cabinets

Equipment Description Essential Siphon Vacuum Cabinet No.1

Location: Bldg. AB Floor El. 796'+6" Room, Row/Col EQ.ROOM

Manufacturer, Model, Etc. (optional) Hoffman A-603624FS

SEISMIC CAPACITY VS DEMAND

1.	Elevation where equipment receives seismic input	<u>796'+6"</u>		
2.	Elevation of seismic input below about 40' from grade	[Y] N U		
3.	Equipment has fundamental frequency above about 8 Hz	Y [N] U N/A *		
4.	Capacity based on: Existing Documentation	DOC		
	Bounding Spectrum	BS		
	1.5 x Bounding Spectrum	[ABS]		
	GERS	GERS		
5.	Demand based on: Ground Response Spectrum	GRS		
	1.5 x Ground Response Spectrum	AGRS		
	Conserv. Des. In-Str. Resp. Spec.	CRS		
	Realistic M-Ctr. In-Str. Resp. Spec.	[RRS]		
Does capacity exceed demand?			[Y] N U *	

CAVEATS - BOUNDING SPECTRUM (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below)

1.	Equipment is included in earthquake experience equipment class	[Y] N U N/A *
2.	No computers or programmable controllers	[Y] N U N/A
3.	No strip chart recorders	[Y] N U N/A
4.	Steel frame and sheet metal structurally adequate	[Y] N U N/A
5.	Adjacent cabinets or panels which are close enough to impact, or sections of multi-bay cabinets or panels, are bolted together if they contain essential relays	Y N U [N/A]
6.	Drawers and equipment on slides restrained from falling out	Y N U [N/A] *
7.	All doors secured by latch or fastener	[Y] N U N/A
8.	Attached lines have adequate flexibility	[Y] N U N/A
9.	Anchorage adequate (See checklist below for details)	[Y] N U N/A
10.	Relays mounted on equipment evaluated	[Y] N U N/A *
11.	Have you looked for and found no other adverse concerns?	[Y] N U N/A
Is the intent of all the caveats met for Bounding Spectrum?		[Y] N U N/A

ANCHORAGE

1.	Appropriate equipment characteristics determined (mass, CG, natural freq., damping, center of rotation)	[Y] N U N/A
2.	Type of anchorage covered by GIP	[Y] N U N/A *
3.	Sizes and locations of anchors determined	[Y] N U N/A

Attachment 3
page 9 of 12

SCREENING EVALUATION WORK SHEET (SEWS)

Equip. ID No. 2ESV1 Equip. Class 20 - Instr. & Control Panels & Cabinets

Equipment Description Essential Siphon Vacuum Cabinet No.1

ANCHORAGE (Cont'd)

- | | |
|--|---------------|
| 4. Adequacy of anchorage installation evaluated (weld quality and length, nuts and washers, expansion anchor tightness, etc.) | [Y] N U N/A * |
| 5. Factors affecting anchorage capacity or margin of safety considered: embedment length, anchor spacing, free-edge distance, concrete strength/condition, and concrete cracking | [Y] N U N/A |
| 6. For bolted anchorages, gap under base less than 1/4-inch | [Y] N U N/A |
| 7. Factors affecting essential relays considered: gap under base, capacity reduction for expansion anchors | [Y] N U N/A |
| 8. Base has adequate stiffness and effect of prying action on anchors considered | [Y] N U N/A * |
| 9. Strength of equipment base and load path to CG adequate | [Y] N U N/A |
| 10. Embedded steel, grout pad or large concrete pad adequacy evaluated | Y N U [N/A] |
| Are anchorage requirements met? | [Y] N U N/A * |

INTERACTION EFFECTS

- | | |
|---|---------------|
| 1. Soft targets free from impact by nearby equipment or structures | [Y] N U N/A |
| 2. If equipment contains sensitive relays, equipment free from all impact by nearby equipment or structures | [Y] N U N/A * |
| 3. Attached lines have adequate flexibility | [Y] N U N/A |
| 4. Overhead equipment or distribution systems are not likely to collapse | [Y] N U N/A |
| 5. Have you looked for and found no other adverse concerns? | [Y] N U N/A |
| Is equipment free of interaction effects? | [Y] N U * |

IS EQUIPMENT SEISMICALLY ADEQUATE

[Y] N U

COMMENTS

Cabinet is seismically adequate pending acceptable interaction and internal component mounting walkdown. Rev. 1: Final walkdown reveals no interaction concerns. All internal components are present and properly mounted. All relays are assumed to be essential unless determined otherwise.

COMMENTS FROM SEISMIC CAPACITY VS DEMAND

3 Assumed to be < 8 Hz

Does capacity exceed demand? Demand based on 5% damped instructure resonance spectra @ 796' +6" in the AB

COMMENTS OF CAVEATS - BOUNDING SPECTRUM

*Attachment 3
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Design Difference Evaluation:

Cabinets are Hoffman A-603624FS. The new cabinets were compared to similar existing Hoffman cabinets at Oconee and the 1997 Hoffman catalog was compared to the October 1976 Hoffman catalog. Both new and old cabinets are made of 12 gauge steel, all seams are continuously welded and there are no holes or knockouts. All door hinges and internal frame structures were found to be identical. Both new and existing doors have 3 point latching door handles. These cabinets were found to be identical in construction to existing Hoffman cabinets.

The structural load path of Hoffman type enclosures is similar to that shown for Enclosed Switchboards in Fig. 20-2 of EPRI NP-7149-D. Overall construction of the Hoffman cabinets is judged to be equivalent to typical Control and Instrumentation Panels & Cabinets represented in the earthquake experience database.

All internals were not present at inspection. Final inspection to be performed prior cabinet being declared operational. Rev 1: Final inspection performed per rev 1. All relays present and properly mounted.

6 There are no drawers or equipment on slides in the cabinets

10 All internal components required to function either during or after a seismic event have been evaluated to IEEE 344-075 standards. Field mounting of relays to be inspected prior to start up of system. Rev. 1: Final inspection of cabinet reveals that all relays are present and properly mounted.

COMMENTS OF ANCHORAGE

2 Anchored with 4 HN 1230 sleeve anchors.

4 Anchors were installed per QA procedure MP/O/A/1800/35.

8 Bottom of cabinet is stiffened with inverted channel. Bottom of cabinet is sandwiched between back of channel web and floor. This effectively stiffens the base of the cabinet.

Are anchorage requirements met? See calculation in OSC-6040.

COMMENTS OF INTERACTION EFFECTS

2 There is a 5/8 gap between the North lifting lug and existing conduit. gap is acceptable based low accelerations and stiffness of cabinet about strong axis.

Is equipment free of interaction effects? Cabinet must be walked for interaction prior to putting into service. All adjacent equipment may not have been installed at the time of this assesment. Rev 1: Final walkdown reveals no interaction concerns.

Attachment 3
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SCREENING EVALUATION WORK SHEET (SEWS)

Equip. ID No. 2ESV1 Equip. Class 20 - Instr. & Control Panels & Cabinets

Equipment Description Essential Siphon Vacuum Cabinet No.1

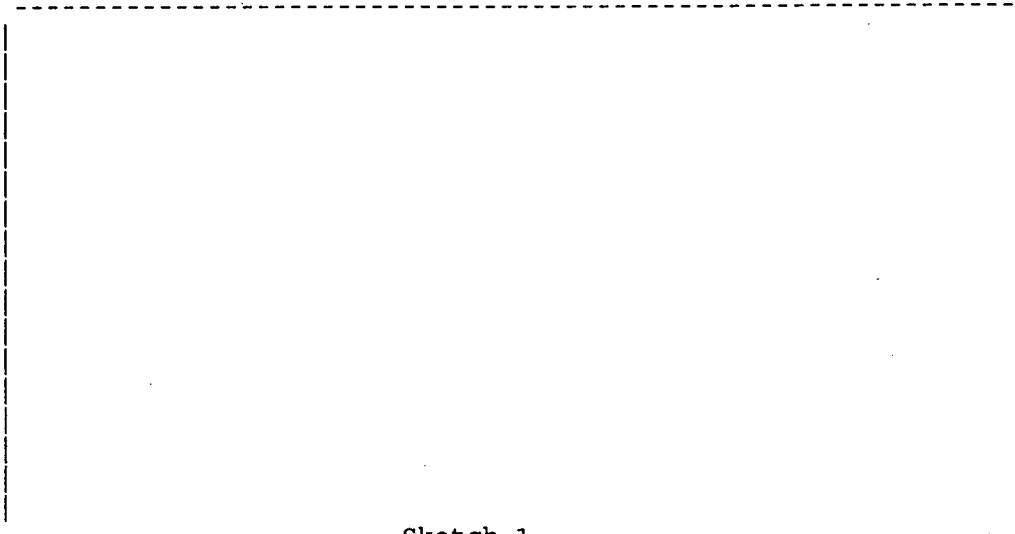
Evaluated by:

Ronald Charles 4/16/98

Date: 04/01/98

Robert E. Q 4/16/98

Date: 04/01/98



-----Sketch 1-----

Attachment 3
page 12 of 12