



**PSE&G** Public Service  
Electric and Gas  
Company

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Robert L. Mittl General Manager  
Nuclear Assurance and Regulation

July 31, 1985

Director of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
7920 Norfolk Avenue  
Bethesda, MD 20814

Attention: Mr. Walter Butler, Chief  
Licensing Branch 2  
Division of Licensing

Gentlemen:

EQUIPMENT QUALIFICATION AUDIT ITEMS  
HOPE CREEK GENERATING STATION  
DOCKET NO. 50-354

Pursuant to the Equipment Qualification audit held on  
July 15-18, 1985, Public Service Electric and Gas Company  
(PSE&G) hereby submits the following information for review:

- Item 1a - Revised Environmental Equipment Summary  
Sheets (EESS) for equipment audited.
- Item 2 - Justification of Pyco temperature element.
- Item 3 - Justification for use of Anaconda flex  
conduit (Drywell).
- Item 7 - Justification for use of Anaconda flex  
conduit (Reactor Building).
- Item 8 - Equipment Traceability.
- Item 11 - Position on use of maximum service  
temperature.

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Mr. Walter Butler

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7/31/85

Item 12 - Solenoid valve aging.

Should you have any questions in this regard, please contact us.

Very truly yours,

*RL Mittl / RP Douglas*

Enclosures

C D. H. Wagner  
USNRC Licensing Project Manager (w/attach.)

A. R. Blough  
USNRC Senior Resident Inspector (w/attach.)

H. Garg  
USNRC EQ Branch (w/attach.)

D. Beahm  
EG&G Idaho, Inc. (w/attach.)

ITEM #1 (A)

EESS REVISIONS IDENTIFIED DURING AUDIT

BUCHANAN TERMINAL BLOCK

HOPE CREEK GENERATING STATION

SUPP. NO: E37917-IFB-001

REV. NO:

DATE: 7/17/85

EQUIPMENT DESCRIPTION	PARAMETERS	ENVIRONMENT		DOCUMENTATION REFERENCE		QUALIF. METHOD	OPEN ITEMS	MARGIN	REMARKS
		SPECIFIED	QUALIFIED	SPECIFIED	QUALIFIED				
(1) SYSTEM VARIOUS	OPERATING TIME	100 days	160.4 days	A, Pg.42 & 81 Note #4	E1	Test and Analysis	None	60.4 days	7 day DBE test extended by Ref.E1
(2) TAG NO. N/A	TEMP. (°F)	300 (Max) Note #6	346 (Max) Note #1	"	E2	"	None	46	
(3) COMPONENT TERMINAL BLOCK	PRESSURE (PSIG)	2.9 (Peak) Note #6	113 peak Note #1	"	B, Pg.5-14	Test	None	110	
(4) MANUFACTURER BUCHANAN	RELATIVE HUMIDITY (%)	100-6 hrs then 95	Steam		B, Pg.5-15 95.10	"	None	Not req'd	
(5) MODEL NO. NQB 104 NQB 108, NQB 112	FLOODING/FROM	N/A	N/A	N/A	N/A	N/A	None	Not req'd	
(6) FUNCTION NOTE #3	RADIATION (RAD/S)	2.34E5 RG 1.1E6R B	2.08E8 RG Note #2	D	B, Pg.5-7 95.5	Test	None	1.9/BE8 RG	
(7) ACCURACY a) SPECIFIED N/A b) ACTUAL N/A	AGING	40 yrs @ 115°F	40 yrs @ 122°F	A, 9VIA1 Pg.15	Note #5	and Analysis	None	Not req'd	
(8) LOCATION REACTOR BLDG. NOTE #4	SPRAY	N/A	N/A	N/A	N/A	N/A	None	Not req'd	
(9) ABOVE FLOOD LEVEL YES <u>X</u> NO <u>    </u>	DOCUMENTATION REFERENCE:				NOTES				
(10) SEISMICALLY TESTED YES <u>X</u> REF. <u>B</u> NO <u>    </u>	A. DITS 10855-D7.5, Rev.2				1. For Temp. and Press. Profile see Ref.B, Pg.5-14.				
(11) SURVEILLANCE REQD. YES <u>REF.   </u> NO <u>X</u>	B. FRC Report F-C5143 Dt. 7/17/80 (F 37917Q-1-1F)				2. The Qualified Radiation Dose encompasses specified G and B Doses				
	C. FRC Project C5143 Dt. 6/27/79 (F 37917Q-1-1F)								
	D. 10855-D7.5, Rev.2, Table 6.								
	E1. Doc.No.F37917-ARRH-001, Rev.0 (5/24/85)								
	E2. Doc.No.F37917-ARRH-002, Rev.0 (5/24/85)								
	F. Bechtel memo dt. 3/29/85 and 7/17/85.								

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ATTACHMENT TO F37917-TFB-001

3. Provides connection for safety related equipment, Category 2a.
  - °In areas subjected to direct spray, terminal blocks should be enclosed in NEMA 4 Boxes with bottom entry. For top entry, the entry should be sealed.
  - °In areas which are not subjected to direct spray, both NEMA 4 and NEMA 12 boxes can be used.
4. No Class 1E Terminal Box is located in Steam Tunnel, Pipe Chase, Torus and Inside Drywell area. See Ref.F, Rm #4111 (HPCI) has been considered for worst environment condition.
5. Ref.C, Pg. A5, A6, and A6a.  
Ref.B, Pg.5-3, Para. 5.3.
6. For specified temp. and pressure profile, see Ref.A, Pg., 42&81.

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EQUIPMENT EVALUATION SUMMARY SHEET  
ANNACONDA FLEXIBLE CONDUIT (NMC)

SMT. NO: F43511-COND-001  
REV. NO: 2  
DATE: 7/18/85

HOPE CREEK GENERATING STATION

EQUIPMENT DESCRIPTION	PARAMETERS	ENVIRONMENT		DOCUMENTATION REFERENCE		QUALIF. METHOD	OPEN ITEMS	MARGIN	REMARKS
		SPECIFIED	QUALIFIED	SPECIFIED	QUALIFIED				
(1) SYSTEM VARIOUS	OPERATING TIME	100 days	>> 1.3 years	A Table 5 D	B Item 2	Test and Analysis	None	>1.3 yrs	
(2) TAG NO. N/A	TEMP. (°F)	See Note #1	345°F (Max) 8hr Note #2	A Table 5	C Pg.3-5	Test	None	Adequate	Excess duration at high temp. Also adequate margin provided in pres.
(3) COMPONENT FLEX CONDUIT	PRESSURE (PSIG)	See Note #1	113 (Max) Note #2	A Table 5	C Pg.3-5	Test	None	51	
(4) MANUFACTURER ANNACONDA	RELATIVE HUMIDITY (%)	See Note #1	100	A Table 5	C Pg.3-2	Test	None	Not req'd	
(5) MODEL NO. NMC	FLOODING/FROTH	Yes	Yes	A, Pg.12	C, Pg.3-3	Test	None	Not req'd	
(6) FUNCTION SEE NOTE #5	RADIATION (RADS)	See Note #1	2x10 <sup>8</sup> RG Note #4	A Table 4	C App.C	Test	Note #4	1.632x10 <sup>8</sup> RG	Qualified Radiation level Encompasses normal Gamma plus Neutron TID.
(7) ACCURACY a) SPECIFIED b) ACTUAL	AGING	40 years @150°F	40 years @150°F	A Pg.18 9B.1a	C, Pg.1-1 E	Test and Analysis	None	Not req'd	
(8) LOCATION INSIDE DRYWELL	SPRAY	Yes	Yes	A, Pg.19, 21	C, Pg.3-2	Test	None	Not req'd	
(9) ABOVE FLOOD LEVEL YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	<p>DOCUMENTATION REFERENCE:</p> <p>A. 10855-D7.5, Rev.2 (1 of 84)</p> <p>B. Annaconda ltr 3/15/84 (Justification of extension of 30 day test and thermal aging).</p> <p>C. Franklin Report F-C4350-2 dt 7/76 (See Ref.F.)</p> <p>D. Bechtel memo dt.6/10/85 (Confirming 100 days DBE duration inside primary containment.)</p> <p>E. F43511-ARRH-001, Rev.0, 7/18/85</p> <p>F. Annaconda ltr dt 7/19/85 indicating similarity of NMC Conduit Jacket Material to that of Annaconda wiring cable.</p>								
(10) SEISMICALLY TESTED YES <input type="checkbox"/> REF. <input type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/>	<p>NOTES</p> <p>1. 0-20 340 0-62 100 205-5min 340 62 100 5m-3hr 340 40 100 3h-6hr 320 40 100 6h-24hr 250 25 100 1d-4days 200 25 100 4d-100days 200 10 100</p> <p>2. For time dependent profile, refer to Pg.3-5 of Ref. C.</p>								
(11) SURVEILLANCE REQ. YES <input type="checkbox"/> REF. <input type="checkbox"/> NO <input checked="" type="checkbox"/>	<p>3. Gamma Normal TID 7.4x10<sup>6</sup> RAD Gamma DBE TID Air. 2.6x10<sup>6</sup> Gamma DBE Plate out 3.4x10<sup>6</sup> Beta DBE TID Air 9.5x10<sup>8</sup> Beta DBE TID Plate 6.7x10<sup>8</sup> Neutron Normal TID 1.1x10<sup>8</sup></p> <p>4. B Radiation Qualification (later).</p> <p>5. Provides protection for cables to safety related equipment, Category 2a.</p>								

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EQUIPMENT EVALUATION SUMMARY SHEET  
ANNACONDA FLEXIBLE CONDUIT (NPW)

SIT. NO: F43511-COND-002

REV. NO: 2

DATE: 7/25/65

HOPE CREEK GENERATING STATION

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EQUIPMENT EVALUATION SUMMARY SHEET  
CONAX ELEC. COND. SEAL ASS'Y.

SUP. NO: F51216-SEAL-001

MDV, MDI

DATE: 7/17/85

HUPE CREEK GENERATING STATION

EQUIPMENT DESCRIPTION	PARAMETERS	ENVIRONMENT		DOCUMENTATION REFERENCE		QUALIF. METHOD	OPEN ITEMS	MARGIN	REMARKS
		SPECIFIED NOTE #1	QUALIFIED	SPECIFIED	QUALIFIED				
(1) SYSTEM VARIOUS, GENERIC USE	OPERATING TIME	100 days	>2141 day	Ref. A Table 5.C	Ref. B1 Figure 6.9.3 Ref. B3	Test and Analysis	None	>2041 days	17 days DBE Test extended by Ref. B3.
(2) TAG NO. FIELD PURCHASE	TEMP, (°F)	340 (Max.) Note #4	355 (Max.) Note #5			Test	None	Adequate	See Note #3
(3) COMPONENT ELECTRICAL CONDUCTOR SEAL ASS'Y	PRESSURE (PSIG)	62 psig (Peak) Note #4	72 psig (Peak) Note #5			Test	None	10 psig	
(4) MANUFACTURER CONAX	RELATIVE HUMIDITY (%)	100%	100%			Test	None	Not req'd	
(5) MODEL NO. ECSA	FLOODING/FROTH	Yes	Submergence 2406 hours	Ref. A, Pg. 12	Ref. B1 Addendum A	Test	None	Not req'd	
(6) FUNCTION TO SEAL ELECTRICAL CONNECTIONS	RADIATION (RAD)	5.04E7R 6 1.62E9R 8	2.25E8R 6 Notes 2	Ref. A Table 4	Ref. B1 Appendix B Pg. B-3	Test	None	1.75E8R 6	
(7) ACCURACY a) SPECIFIED N/A b) ACTUAL N/A	AGING	40 yrs @ 150°F	40 yrs @ 250°F	Ref. A Pg. 18	Ref. B2 CONAX ltr of 3/31/84	Test and Analysis	None	Not req'd	Periodic maintenance is not required.
(8) LOCATION NOTE #1	SPRAY	Yes	Chemical Spray	Ref. A, Pg. 19, 21	Ref. B Fig. 6.9.3	Test	None	Not req'd	
(9) ABOVE FLOOD LEVEL YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	<p><b>DOCUMENTATION REFERENCE:</b></p> <p>A. NRC Environmental Design Criteria 10855-D7.5 Rev. 2 Dtd. 10/84</p> <p>B. CONAX Qualification Reports:</p> <ol style="list-style-type: none"> <li>1. IPS-1079 Rev. A, Dtd. 1/84 (10855-F51216(Q)-1-1F)</li> <li>2. IPS-325 Rev. D Dtd. 5/81 (10855-F51216(Q)-3-1F) including CONAX forwarding ltr of 5/31/84.</li> <li>3. IPS-409.1 Dtd. 2/82 (10855-P301(Q)-539(2)-1) Fig. 4.5.1 and 14.5.3.</li> </ol> <p>C. Bechtel Memo dt. 6/10/85 (Confirming 100 days DBE duration inside primary containment.)</p>								
(10) SELECTIONALLY TESTED YES <input checked="" type="checkbox"/> REF. Q1 NO <input type="checkbox"/>	<p><b>NOTES</b></p> <ol style="list-style-type: none"> <li>1. The CONAX ECSA Seals should not be used inside the Vessel Shield.</li> <li>2. For Beta Radiation refer to Beta Rad. Qual. Report for P.O. No. P301(Q), P302(Q) and P303A(Q) and the Telecon Dt. 3/18/85 attached.</li> <li>3. CONAX Report IPS-409.1 (2/82), Ref. B3, 10855-P301(Q)-539(2)-1 encompasses specified temperature for adequate duration. Ref. B1, Fig. 6.9.5-Second DBE Transient provides acceptable margin.</li> <li>4. For Spec. Temp. and Pressure Profile, See Ref. A, Pg. 40, Table 5.</li> <li>5. For Qualified Temp. and Pressure Profile, See Ref. B1, Fig. 6.9.3 and Ref. B3, Fig. 4.5.1.</li> </ol>								
(11) SURVEILLANCE MON. YES <input type="checkbox"/> REF. B2 NO <input checked="" type="checkbox"/>									



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EQUIPMENT EVALUATION SUMMARY SHEET  
ROTORK VALVE ACTUATOR

SHT. NO: J605-HV-003  
REV. NO: 3  
DATE: 7/18/85

HOPE CREEK GENERATING STATION

EQUIPMENT DESCRIPTION	PARAMETERS	ENVIRONMENT		DOCUMENTATION REFERENCE		QUALIF. METHOD	OPEN ITEMS	MARGIN	REMARKS
		SPECIFIED	QUALIFIED	SPECIFIED	QUALIFIED				
(1) SYSTEM (BC) RHR SYSTEM	OPERATING TIME	100 days	100 days	Ref. A 15.3	Ref. B Appendix X-2 & Ref. C	Test and Analysis	None	Adequate	30 day test extended analysis. Ref. C
(2) TAG NO. 1-BC-HV-F048A 1-BC-HV-F048B	TEMP. (°F)	340°F-30min 150°F-100da	385°F-2hrs 215°F-30days			Test	None	45°F	Note #3
(3) COMPONENT VALVE ACTUATOR	PRESSURE (PSIA)	5psig-30min -.25"wg.-190days	75psig-2hrs 15psig-30day			Test	None	70psig (Peak)	Note #3
(4) MANUFACTURER ROTORK	RELATIVE HUMIDITY (%)	100%-30min 90%-100 days	100%			Test	None	Not req'd	
(5) MODEL NO. SYNCROSET	FLOODING/FROTH	N/A	Submergence	N/A	Ref. D	Test	None	Not req'd	
(6) FUNCTION See Note #1	RADIATION (RADS)	1E7R G	2.04E8R G	Ref. A	Ref. B Section 6 Note #2	Test	None	1.94E8R G	
(7) ACCURACY a) SPECIFIED N/A b) ACTUAL N/A	AGING	40 yrs @ 79°F	44.5 yrs. @ 94 °F	Rev. E Pg. 43	Ref. C	Test and Analysis	None	Not req'd	
(8) LOCATION REACTOR BLDG. RM. 4214(A) 4208(B)	SPRAY	N/A	Chemical spray and steam imping.	N/A	Ref. B Appendix 10-2	Test	N/A	Not req'd	
(9) ABOVE FLOOD LEVEL YES <u>X</u> NO <u>    </u>	<div style="display: flex; justify-content: space-between;"> <div> <p>DOCUMENTATION REFERENCE:</p> <p>A. Technical Specification 10855-J605(Q), Rev. 7 (11/84)</p> <p>B. Myle Qualification Report 43979-1 Rev. A (12/78) (10855-J605(Q)-70-3)</p> <p>C. Rotork letter 8/16/84 (J605) 10855-J605(Q)-70-3)</p> <p>D. Rotork letter 8/21/84 including TR-178 (10855-P303A(Q)-304-1)</p> <p>E. Environmental Design Criteria - 10855-D7.5, Rev. 2 (10/84)</p> </div> <div> <p>NOTES</p> <p>1. Operates RHR Hx bypass control valve automatically opens on low reactor water level and high drywell pressure. Category 2a item.</p> <p>2. Beta radiation qualification report. CCN#0264399 dt. 5/15/84.</p> <p>3. The qualified valve shown is conservative. For actual temp. and pressure profile see Ref. B, Pg. X-9.</p> <p>4. Qualification of the actuator constitutes qualification of the internal limit switches.</p> </div> </div>								
(10) SEISMICALLY TESTED YES <u>X</u> REF. <u>B</u> NO <u>    </u> (Sect. 8)									
(11) SURVEILLANCE REQ. YES <u>X</u> REF. <u>B</u> NO <u>    </u>									

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## EQUIPMENT EVALUATION SUMMARY SHEET

SFT. NO: M001-XV-001

REV. NO: 3

DATE: 7/17/85

HOPE CREEK GENERATING STATION BOOK 511, CONAX SLC EXPLOSIVE VALVE

EQUIPMENT DESCRIPTION	PARAMETERS	ENVIRONMENT		DOCUMENTATION REFERENCE		QUALIF. METHOD	OPEN ITEMS	MARGIN	REMARKS
		SPECIFIED	QUALIFIED	SPECIFIED	QUALIFIED				
(1) SYSTEM (BH) STANDBY LIQUID CONTROL (2) TAG NO. 1-BH-XV-F004A 1-BH-XV-F004B (3) COMPONENT SLC EXPLOSIVE VALVE (4) MANUFACTURER CONAX CORP. (5) MODEL NO. 1832-162-01(VLV) 1532-162-01(KIT) (6) FUNCTION SEE NOTE #1 (7) ACCURACY a) SPECIFIED N/A b) ACTUAL N/A (8) LOCATION REACTOR BLDG. E1.162', Rm. #4606 (9) ABOVE FLOOD LEVEL YES X NO — (REF. A Pg. 7) (10) SEISMICALLY TESTED YES X REF. A NO — (App. H) (11) SURVEILLANCE REQD. YES X REF. A NO — (Pg. 19) M-48-1	OPERATING TIME	1hr ATWS	11 1/2 hr Equiv.	Ref. A, Pg. A-38	Ref. A, Pgs. J-135 & J-136 Ref. B, Item 48	Test and Analysis	None None	10 1/2 hr	34 Min. DBE test duration extended by Arrhenius methodology
	TEMP. (°F)	148°F	200°F	Ref. A Pg. A3-3	Ref. A, Pgs. J-135, 136, 29, 30	Test	None	52°F	
	PRESSURE (PSIA)	0 psig	16.5 psig	"	"	Test	None	16.5 psig	
	RELATIVE HUMIDITY (%)	100% Max.	100%	"	"	Test	None	Not req'd	
	FLOODING/FROTH	N/A	N/A	N/A	N/A	N/A	None	Not req'd	
	RADIATION (RADS)	Note #5	1.35E6R G 4.17E5R G	Ref. A Pg. A3-5	Ref. A Pgs. J27, J28, J-57	Test	None	>1000%	Note #3 Note #4
	AGING GROUP I 40yrs@101°F 2yr storage GROUP II 3yr oper.		40yrs@101°F 2yr storage 3yr oper.	Ref. A, Pgs. A-7, A3-3 A3-9 & 10	Ref. A Pg. J26, 27	Test and Analysis	None	Not req'd	Note #2
	SPRAY	N/A	Water 1.1 gpm/pt 5min. periodic	Ref. A Pg. A3.3	Ref. A Pg. J-135	Test	None	Not req'd	Storage and replacement criteria req'd per Ref. A

**DOCUMENTATION REFERENCE:**

A. NSSS Book 5-11, GE  
NEDC-30804 Dtd. Nov. 11, 1984

B. GE Co. 1tr Ser. GP-85-42  
Dtd. 3/7/85 (comment resolutions)

**NOTES**

- Explosive actuated valve operated to release boron solution into reactor. Category 2a item per NUREG-0588, Appendix E.
- Group I is valve, Group II is replacement kit.
- ATWS considered as 10% of DBE for radiation (Ref. A, Pg. 3-5)
- Qualified radiation levels of gamma include beta equivalence.
- GROUP I 886R G  
190R B  
GROUP II 72.8R G  
190R B

ITEM #2

JUSTIFICATION OF PYCO TEMPERATURE ELEMENT

ITEM #2

TEMPERATURE ELEMENT  
PYCO, INC.  
BOOK C03 (NEDC 30428)

PYCO instruments have been tested to show that they respond within two seconds as shown on page 245, paragraph 2.3, of NEDC 30428. This test shows that when the instrument is exposed to air moving at a mass velocity of 6 lbs/sec ft<sup>2</sup>, it will take well under two seconds to reach 63 percent of a step change in temperature.

The instruments tested during the DBE phase of testing were essentially in still air. This test set-up resulted in a six to eight minute lag between the reference bare-wire thermocouple, and the test instrument which was bear sheathed. Some instruments mounted in the field are actually measuring ambient room temperature and are, therefore, not mounted in an air stream. Therefore, it can be concluded that a thermal lag of up to eight minutes will exist for such installations.

GE has stated in a letter of July 17, 1985, that when measuring ambient temperature, these instruments are intended to be effective in the leak range of 25 gpm (209 lbs/min of steam) or greater. In the presence of large steam leaks (greater than 25 gpm) air in the compartments would not be still, and the instrument would respond faster than the eight minute lag observed in still air.

GE has evaluated the 25 gpm case as a lower limit case (small pipe break). Based on typical studies, using thermohydraulic computer codes such as RELAP, it has been shown that it takes on the order of 20 minutes to isolate, taking into account an eight minute time lag of the thermocouple. A 20 minute leak of 209 lbs/min releases 4180 pounds of steam. Larger leaks with shorter isolation times result in similar mass releases. No safety limits are exceeded due to releasing this amount of steam into a subcompartment or steam tunnel.

In conclusion, the time lag of the thermocouple is only one of many variables that effect trip time. Appropriate trip points will be chosen such that for a range of environmental and HVAC conditions, the automatic isolation will occur with adequate margin to safety limits.

ITEM #3

JUSTIFICATION FOR USE OF ANACONDA  
FLEX CONDUIT (DRYWELL)

ITEM NO. 3

JUSTIFICATION FOR USE OF ANACONDA FLEX CONDUIT (DRYWELL)

Franklin Institute Reports F-C4033-3, F-C4350-2 and F-C4836-2 and Anaconda Technical Data Report No. 3727, describe qualification testing of Type NWC and NPW jacket material.

Certain tests were conducted on wiring cable and heat-shrinkable cable splices using identical jacket materials to that of Type NWC and NPW conduit. Outer jackets on wiring cable and heat shrinkable cable splices have similar "form, fit and function" to jackets on flexible conduit.

The similarity of design and jacket application methods have adequately qualified Type NWC and NPW jacket materials to IEEE 323 and 383 requirements.



ITEM #7

JUSTIFICATION FOR USE OF ANACONDA  
FLEX CONDUIT (REACTOR BLDG.)

ITEM #7

JUSTIFICATION FOR USE OF ANACONDA  
FLEX CONDUIT (REACTOR BLDG.)

The use of liquid tight flexible conduit in the Reactor building is to provide a flexible raceway connection to motors and instruments to accommodate minor amounts of movement or vibration. In addition to mechanical protection this type of conduit provides protection from humidity, dripping water or spraying water. The liquid tight flexible metal conduit is industrial type UA manufactured to Underwriters Laboratories standard 360 (January 2, 1982). The manufacturers temperature rating is 140°F, which is greater than the maximum normal and the maximum abnormal Reactor building temperatures.

Drawing E-1408-0(Q) (Sections 11 and 13) provides the listing of equipment and the guidelines for sealing safety related devices and equipment for moisture intrusion protection. These sections of Drawing E-1408-0(Q) were developed based on the NRC staff recommendations stated in Information Notice IN-84-57 dated July 27, 1984.

The use of appropriate seals as specified in Drawing E-1408-0(Q) is the primary means of moisture intrusion protection. Liquid tight flexible conduit performs no safety function hence its use in the Reactor building outside the drywell is justified.

ITEM #8

EQUIPMENT TRACEABILITY

ITEM # 8

PROPOSED REPLY ON FIELD VERIFICATION  
OF EQUIPMENT REQUIRING EQ

All of the current drawings which indicate the location of devices are being cross-checked against the EQ documentation which identifies the location of equipment (e.g. EESS and EQMSIS). This final check of design and EQ documents will provide a data base for a field verification which will be conducted prior to fuel load.

The field verification will be an audit of a representative sample of equipment which will verify the device location, interfaces, type, model number, and tag identification of the equipment to ensure that the installed equipment is the same as the qualified equipment.

ITEM #11

POSITION ON USE OF MAXIMUM  
SERVICE TEMPERATURE

PROPOSED POSITION STATEMENT ON  
USE OF MAX. NORMAL SERVICE  
TEMPERATURE IN LIEU OF  
WEIGHTED AVERAGE

PSE&G is currently evaluating the effects on equipment qualified life if the maximum normal service temperature is used in the aging evaluation of each device. It is expected that this evaluation will result in one or more of the following situations:

1. No loss of qualified life due to aging condition being equal to, or greater than, the requirements for the device.
2. No loss of qualified life due to performance of an Arrhenius evaluation which shows acceptable aging to the maximum temperature.
3. Partial loss of qualified life resulting in somewhat earlier replacement of equipment.
4. Severe loss of life resulting in significantly earlier equipment replacement.

For cases 3 and 4 above, the following activities will be completed prior to fuel load:

- A. Specific room temperatures instead of enveloping temperatures, will be determined by calculation. If the room specific temperature is lower than the enveloping temperature, an appropriate qualified life will be determined.
- B. PSE&G will determine which equipment to replace/maintain on an earlier schedule or will retain the option to install room temperature monitors to verify the accuracy of previously determined average temperature values. Such temperature monitors, if used, would be removed after approximately one year of operation.
- C. PSE&G will identify any equipment which it elects to replace because of impractical qualified lifetimes.



ITEM #12

SOLENOID VALVE AGING

ITEM #12

SOLENOID VALVE AGING

The Hope Creek plant uses solenoid valves provided by ASCO and Valcor which have been qualified by tests for continuously energized service. These tests included the effects of solenoid coil heat rise during the aging portion of the qualification testing.