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MILLER,J.R. Operating Reactors Branch 3

SUBJECT: Forwards documentation of resolution of deficiencies noted in 830228 SER re environ qualification of safety-related electrical equipment, as discussed w/NRC during 840508 meeting. Requests SSERs be issued.
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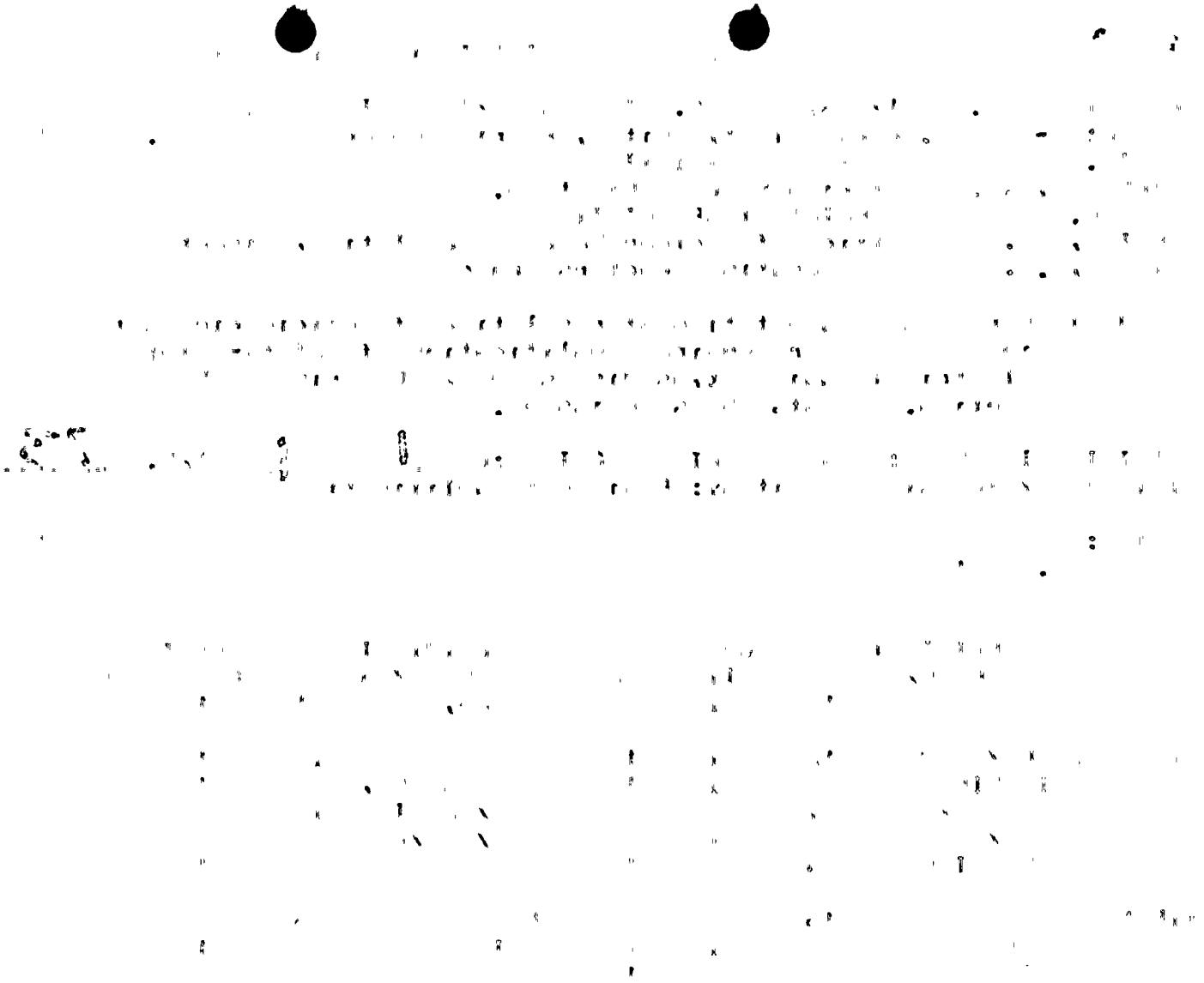

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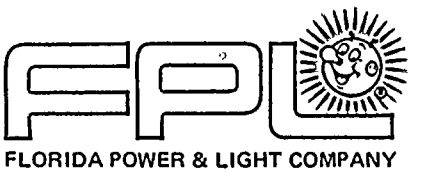

FLORIDA POWER & LIGHT COMPANY

L-84-162
July 12, 1984

Mr. H.R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
Attention: Mr. J.R. Miller, Chief
Operating Reactors Branch 3

Gentlemen:

Re: St. Lucie Unit 1
Docket No. 50-335
Environmental Qualification of
Safety-Related Electrical Equipment

On May 8, 1984, Florida Power and Light met with NRC personnel to discuss the resolution of deficiencies documented in the Safety Evaluation Report (SER) dated February 28, 1983 regarding the Environmental Qualification of safety-related electrical equipment at St. Lucie Unit 1 (PSL). The SER contained a Technical Evaluation Report (TER), written by Franklin Research Center under contract to the NRC, which identified environmental qualification deficiencies for safety-related electrical equipment at PSL. The purpose of this letter is to provide documentation of the resolution of these deficiencies as discussed with the staff at the May meeting.

Discussions also took place at the meeting regarding Florida Power and Light's general methodology for compliance with 10 CFR 50.49, "Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants," paragraph's (b)(1), (b)(2), and (b)(3).

A synopsis of the methodology for developing the list of equipment within the scope of paragraph (b)(1) is as follows.

> In developing the list of equipment within the scope of Paragraph (b)(1), all design basis events which could result in a potentially harsh environment, including flooding outside the containment, were considered in identifying safety-related electrical equipment which was to be environmentally qualified. A systems approach was used to ensure that all equipment exposed to the accident environment was considered for evaluation, even if such equipment had not been previously identified as safety-related (Class IE) or defined as an engineered safety feature. In addition, equipment required to function in support of emergency operating procedures (EOPs) was also considered for evaluation. A review of worst case design basis accidents was made and a list of Class IE safety-related electric equipment within the scope of Paragraph (b)(1), 10 CFR 50.49 has been developed.

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Electrical equipment within the scope of paragraph (b)(2) includes non safety-related electric equipment whose failure under postulated environmental conditions could prevent satisfactory accomplishment of safety functions. The methodology that was used to identify such equipment is summarized below.

A list was generated of safety-related electric equipment, as defined in paragraph (b)(1) of 10 CFR 50.49, which is required to remain functional during or following design-basis Loss of Coolant Accident (LOCA) or High Energy Line Break (HELB) Accidents. The LOCA/HELB accidents are the only design-basis accidents which result in significantly adverse environments to electrical equipment which is required for safe shutdown or accident mitigation. The list was based on reviews of the St. Lucie Final Safety Analysis Report (FSAR), Technical Specifications, Emergency Operating Procedures, Piping and Instrumentation Diagrams (P&IDs), and electrical distribution diagrams. The elementary wiring diagrams of the safety-related electrical equipment identified per paragraph (b)(1) were reviewed to identify any auxiliary devices electrically connected directly into the control or power circuitry of the safety-related equipment (e.g., automatic trips) whose failure due to postulated environmental conditions could prevent the required operation of the safety-related equipment. The operation of the safety-related systems and equipment were reviewed to identify any directly mechanically connected auxiliary systems with electrical components which are necessary for the required operation of the safety-related equipment (e.g., cooling water or lubricating systems). This involved the review of P&ID's component technical manuals, and/or systems descriptions in the FSAR. Non safety-related electrical circuits indirectly associated with the electrical equipment identified per paragraph (b)(1) by common power supply or physical proximity were considered by a review of the original St. Lucie electrical design including the use of applicable industry standards (e.g., IEEE, NEMA, ANSI, UL, and NECO and the use of properly coordinated protective relays, circuit breakers, and fuses for electrical circuit fault protection.

FPL does not differentiate between equipment which is safety-related and non safety-related equipment whose failure could prevent the proper operation of safety-related equipment. If failure of a device can effect the function of safety-related equipment, that device is included in the 10 CFR 50.49(b)(1) scope. In some cases non-class IE equipment may be powered from a class IE source, however, that equipment is designed to become isolated from the Class IE source should failure occur. As a result, there were no items identified falling into the 10 CFR 50.49 (b)(2) scope.

To identify electrical equipment within the scope of paragraph (b)(3), FPL evaluated existing system arrangements and identified equipment for the five types of variables defined in R.G. 1.97, Rev. 3. A report outlining the results of the review, schedules for modifications where necessary, and justification of deviations not requiring modification has been submitted to the NRC for approval. Since the report is still under review by the NRC, some of the equipment identified in the report has not been added to the 10 CFR 50.49 scope. However, some of the equipment items jointly within the scope of NUREG 0737 and R.G. 1.97 have been included in the 10 CFR 50.49 scope. When the R.G. 1.97 report and equipment lists contained therein have been finalized and accepted by the NRC, appropriate equipment not already in the 10 CFR 50.49 scope will be added in accordance with the R.G. 1.97 implementation schedule.

During the meeting, there was a discussion regarding maintenance and surveillance of qualified equipment. FPL is pursuing a program to ensure that safety-related electrical equipment is maintained in its qualified condition.

In conclusion, we believe that Attachment 1 "Resolution for Specific Equipment Qualification Deficiencies" documents resolution of the deficiencies in the Safety Evaluation Report (SER) dated February 28, 1983. We also believe that St. Lucie Unit 1 can continue to operate without undue risk to the public health and safety based on the JCOs provided in Attachment 2. Per your request, the current "10 CFR 50.49 List" is included as Attachment 3.

As discussed in the May 8 meeting, it is requested that supplemental SERs be issued to indicate that Florida Power and Light's Equipment Qualification Program, as described in this letter, meets the requirements of 10 CFR 50.49 and that the deficiencies noted in the SERs dated February 28, 1983 are considered resolved.

Please contact us if you have any questions.

Very truly yours,

J.W. Williams, Jr.
Group Vice President
Nuclear Energy

DLDM/mp

ATTACHMENT 1

RESOLUTION FOR SPECIFIC EQUIPMENT

QUALIFICATION DEFICIENCIES

ST. LUCI UNIT NO. 1

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
1	II.a	I-MV-88-1A	Limitorque motorized valve actuator for main steam iso. bypass valve	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
2	II.a	I-MV-88-1B	Limitorque motorized valve actuator for main steam iso. bypass valve I-HCV-88-1B	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
3	II.a	I-MV-09-7 I-MV-09-8	Limitorque motorized valve actuator for main feedwater iso. valve	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
4	II.a	I-FCV-25-14 I-FCV-25-16	Limitorque motorized valve actuator for control room air intake	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement	Limitorque has certified Test Report 80003 applies, in which Arrhenius methodology used to address aging degradation and a qualified life of 40 years has been demonstrated	Qualified
5	III.a	V-3614 V-3624 V-3634 V-3644	Limitorque motorized valve actuator for safety injection tank iso. valves	-None	Not in 10CFR50.49 scope. Equipment not required during or following an accident	Deleted
6	II.a	I-MV-14-5 I-MV-14-6 I-MV-14-8	Limitorque motorized valve actuator for iso. valve	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement	Limitorque has certified Test Report 80003 applies, in which Arrhenius methodology used to address aging degradation and a qualified life of 40 years has been demonstrated	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
7	II.a	I-MV-15-1 I-MV-18-1	Limitorque motorized valve actuator for control isolation valve	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement	Limitorque has certified Test Report B0803 applies. Arrhenius methodology used to address aging degradation. A qualified life of 40 years has been demonstrated	Qualified
8	III.b	V-2581	Limitorque motorized valve actuator for volume control tank iso. valve	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
9	III.b	I-MV-08-13 I-MV-08-14 I-MV-08-3	Limitorque motorized valve actuator for AFWP turbine steam inlet and stop valves	-Similarity between Equipment -Aging Degradation -Qualified Life or Replacement	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
10	III.b	I-MV-09-9 I-MV-09-11 I-MV-09-13	Limitorque motorized valve actuator for auxiliary feedwater throttle and intertie valves	-Similarity between Equipment -Aging Degradation -Qualified Life or Replacement	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
11	III.b	HCV-3617 HCV-3627 HCV-3637 HCV-3647 V-3659	Limitorque motorized valve actuator for aux. HPSI header iso. and SI pumps miniflow iso. valves	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
12	II.a	V3653 V3655	Limitorque motorized valve actuator for HPSI discharge cross-over valve	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement	Limitorque has certified Test Report B0803 applies. Arrhenius methodology used to address aging degradation. A qualified life of 40 years has been demonstrated	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
13	II.a	V3481 V3652	Limitorque motorized valve actuator for shutdown cooling suction valve	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement	Limitorque has certified Test Reports 680198 plus Addendum 1 and 680376A apply. Arrhenius methodology used to address aging degradation. A qualified life of 40 years has been demonstrated	Qualified
14	II.a	V3480 V3651	Limitorque motorized valve actuator for shutdown cooling suction valve	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement	Limitorque has certified Test Reports 680198 plus Addendum 1 and 680376A apply. Arrhenius methodology used to address aging degradation. A qualified life of 40 years has been demonstrated	Qualified
15	II.a	I-MV-07-2A I-MV-07-2B	Limitorque motorized valve actuator for recirc. suction valve	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement	Limitorque has certified Test Report 80883 applies. Arrhenius methodology used to address aging degradation. A qualified life of 40 years has been demonstrated	Qualified
16	II.a	I-FCV-25-11 I-FCV-25-12 I-FCV-25-13	Limitorque motorized valve actuator for SBVS valve	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement	Limitorque has certified Test Report 80883 applies. Arrhenius methodology used to address aging degradation. A qualified life of 40 years has been demonstrated	Qualified
17	III.b	HCV-3626 V-3668	Limitorque motorized valve actuator for safety injection pump miniflow isolation and HPSI header isolation valves	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
18	III.b	HCV-3615 HCV-3616 HCV-3625 HCV-3635 HCV-3636 HCV-3645 HCV-3646 V-3662 V-3663	Limitorque motorized valve actuator for HPSI and LPSI header iso. and SDCHX to HPSI pump iso. valves	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
19	III.b	5A/1-HCV-08-1B 5B/1-HCV-08-1B	ASCO solenoid valve for main steam iso. valve HCV-08-1B	-Evidence of Qualification	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
20	III.b	4/HCV-08-1A	ASCO solenoid valve for main steam iso. valve HCV-08-1A	-Evidence of Qualification	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
21	III.b	HCV-08-1B	ASCO solenoid valve for main steam iso. valve HCV-08-1B	Evidence of Qualification	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
22	III.b	T5AP T5BP T7AP T7BP	ASCO solenoid valve for main steam iso. valve HCV-08-1A	Evidence of Qualification	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
23	III.b	5A, 5B for HCV-08-1A AND 5A, 5B for HCV-08-1B	ASCO solenoid valve for main steam iso. valves HCV-08-1A and HCV-08-1B	Evidence of Qualification	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
24	III.b	7A, 7B for HCV-08-1A and 7A, 7B for HCV-08-1B	ASCO solenoid valve for main steam iso. valves HCV-08-1B and HCV-08-1A	Evidence of Qualification	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
25	II.a	SE-25-11	ASCO solenoid valve for CTMT vacuum relief valve 1-FCV-25-8	-Evidence of Qualification	Preliminary data from manufactuer indicates valve is qualified - To be verified	To Be Qualified By 9-15-84
26	II.a	SE-25-10	ASCO Solenoid valve for CTMT vacuum relief valve 1-FCV-25-7	-Evidence of Qualification	Preliminary data from manufacturer indicates valve is qualified - To be verified	To Be Qualified By 9-15-84
27	II.a	LSE-87-11A LSE-87-11B	ASCO solenoid valve for control of CTMT sump iso. valves 1-LCV-87-11A and 1-LCV-87-11B respectively	-Evidence of Qualification -Radiation	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
28	III.b	V-3657	ASCO solenoid valve for control air supply to HCV-3657	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
29	II.c	1-FSE-27-1	Valcor solenoid valve for system hydrogen sampling	-Qualified Life or Replacement	Qualified life of 40 years demonstrated using artificial (accelerated) aging techniques based on Arrhenius methodology	Qualified
30	II.a	FSE-87-1A FSE-87-1B	ASCO solenoid valve for control of CTMT sump iso. valves 1-FCV-87-1A and 1-FCV-87-1A respectively	-Evidence of Qualification -Radiation	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
31	II.a	1-FSE-27-08 1-FSE-27-09 1-FSE-27-10 1-FSE-27-11	Circle Seal solenoid valve for CTMT iso. valves	-Evidence of Qualification -Radiation	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
32	II.c	I-FSE-27-2 I-FSE-27-3 I-FSE-27-4 I-FSE-27-5 I-FSE-27-6 I-FSE-27-7	Valcor solenoid valve for system hydrogen sampling	-Qualified Life or Replacement	Qualified life of 40 years demonstrated using artificial (accelerated) aging techniques based on Arrhenius methodology	Qualified
33	II.a	SE-14-3B	ASCO solenoid valve for control of shutdown cooling heat exchanger iso. valve I-HCV-14-3B	-Evidence of Qualification -Radiation	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
34	II.a	I-SE-81-1	Target Rock solenoid valve for RCP bleed-off iso.	-Aging Degradation -Qualified Life -Spray	Aging degradation and qualified life established based on artificial (accelerated) aging using Arrhenius methodology. Spray criteria meeting accident requirements demonstrated in test report	Qualified
35	II.a	I-FCV-23-7 I-FCV-23-9	ASCO solenoid valve for CTMT iso. valves	-Evidence of Qualification -Radiation	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
36	I.b	I-FCV-23-4 I-FCV-23-6	ASCO solenoid valve for CTMT iso. Sta. Gen. blowdown	-Evidence of Qualification	Valves have been replaced by qualified NP series valves. ASCO Test Report No. AQS 21678/TR, Rev. A applies	Qualified
37	I.b	I-FCV-23-3 I-FCV-23-5	ASCO solenoid valve for CTMT iso. Sta. Gen. blowdown	-Evidence of Qualification	Valves have been replaced by qualified NP series valves. ASCO Test Report No. AQS 21678/TR, Rev. A applies	Qualified
38	III.b	V-6554 V-6555	ASCO solenoid valve for V-6554 and V-6555 in waste management system	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
39	III.b	V-2512	ASCO solenoid valve for V-2512 in CVCS	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
40	III.b	V-6741	ASCO solenoid valve for valve V-6741 in waste management	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
41	II.a	V-6382	ASCO solenoid valve for valve V-6382 in waste management system	-Evidence of Qualification -Radiation	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
42	III.b	V-6381	ASCO solenoid valve for valve V-6381 in waste management system	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
43	I.b	I-FCV-25-3 I-FCV-25-4	AVCO solenoid valve for CTMT iso. Stm. Gen. blowdown	-Evidence of Qualification	Valves have been replaced with fully qualified ASCO NP series solenoid valves. ASCO Test Report No. AQS 21678/TR, Rev. A applies	Qualified
44	II.a	SE-25-2	AVCO solenoid valve for CTMT purge iso. valve I-FCV-25-1	-Evidence of Qualification -Radiation	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
45	II.a	SE-25-8	ASCO solenoid valve for control of CTMT purge iso. valve I-FCV-25-6	-Evidence of Qualification	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
46	II.a	SE-25-3 SE-27-7	AVCO Solenoid valve for CTMT sump iso. valve	-Evidence of Qualification	Qualification data being evaluated	To Be Qualified By 9-15-84
47	III.b	V-5284	ASCO solenoid valve for valve V-5284	-None	Not in 10CFR50-49 scope. Equipment located in mild environment	Deleted

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
48	III.b	V-5200 V-5201 V-5202 V-5203 V-5205	ASCO Solenoid valve for control of valves V-5200, V-5201, V-5202 V-5203, and V-5205	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
49	I.b	I-FCV-26-1 I-FCV-26-3 I-FCV-26-5	ASCO Solenoid valve for CIMT iso. Stm. Gen. blowdown	-Evidence of Qualification	Valves have been replaced with fully qualified ASCO NP series solenoid valves. ASCO Test Report No. AQS 21678/TR, Rev. A applies	Qualified
50	II.a	SE-26-2 FSE-26-4 FSE-26-6	ASCO Solenoid valve for CIMT ISO valves I-FCV-26-2, -4, -6	-Evidence of Qualification -Radiation	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
51	II.a	V-2505	ASCO Solenoid valve for control of RCP bleed-off iso. valve	-Evidence of Qualification	Qualification data being evaluated	To Be Qualified By 9-15-84
52	I.b	HCV-3618 HCV-3628 HCV-3638	ASCO solenoid valve for safety injection tanks 1A2, 1A1 and 1B1 leakage drains to RWT	-Evidence of Qualification	Valves have been replaced with fully qualified ASCO NP series solenoid valves. ASCO Test Report No. AQS 21678/TR, Rev. A applies	Qualified
53	I.b	HCV-3648	ASCO solenoid valves. Safety injection tank 1B2 leakage drain to RWT	-Evidence of Qualification	These valves have been replaced with fully qualified ASCO NP series valves. ASCO Test Report AQS 21678/TR, Rev. A applies	Qualified
54	I.b	V-2515 V-2516 V-3661	ASCO solenoid valves. Letdown CIMT iso., recirc. drain tank valves	-Evidence of Qualification	These valves have been replaced with fully qualified ASCO NP series valves. ASCO Test Report AQS 21678/TR, Rev. A applies	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
55	II.a	HSE-14-1 HSE-14-2 HSE-14-3A HSE-14-6 HSE-14-7	ASCO solenoid valve for control of CTMT isolation valves	-Evidence of Qualification	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
56	III.b	T5AP T5BP T7AP T7BP	ASCO solenoid valve for main steam iso. valve HCV-08-1B	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
57	III.b	LS-1 & LS-2 for HCV-08-1A LS-1 & LS-2 for HCV-08-1B	NAMCO limit switch for main steam iso. valves HCV-08-1A and HCV-08-1B	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
58	III.b	LS-3 for HCV-08-1A & LS-3 for HCV-08-1B	NAMCO limit switch for position indication of MSIVs	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
59	III.b	LS-8, LS-9, LS-10, LS-11, LS-12, LS-13, LS-14, LS-15 for HCV-08-1A LS-8, LS-9, LS-10, LS-11, LS-12, LS-13 LS-14, LS-15 for HCV-08-1B	Micro Switch limit switch for control and position indication of MSIVs	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
60	II.a	I-FCV-23-3 I-FCV-23-5	NAMCO limit switch for CTMT iso. valves I-FCV-23-3 AND I-FCV-23-5 respectively	-Aging Degradation -Qualified Life or Replacement -Steam Exposure	Aging degradation and qualified life, based on periodic replacement of elastomers established by an artificial (accelerated) aging program based on Arrhenius methodology. No steam in the environment of these limit switches	Qualified
61	I.a	ZS-25-14 ZS-25-15 ZS-25-16 ZS-25-17	NAMCO limit switches for FCV-25-7 and FCV-25-8	-None	Equipment is fully qualified	Qualified
62	II.c	FCV-3306#ZS HCV-3657#ZS	NAMCO limit switch for position indication	-Qualified Life	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
63	II.c	I-FCV-07-1A I-FCV-07-1B	NAMCO limit switch for position indication for CTMT spray valve	-Qualified Life	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
64	II.c	I-LCV-07-11A I-LCV-07-11B	NAMCO limit switch for position indication for CTMT sump iso. valve	-Qualified Life	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
65	I.b	ZS-PCV-1100E-B ZS-PCV-1100E-C ZS-PCV-1100F-B ZS-PCV-1100F-C	NAMCO limit switch for position indication for pressurizer spray valve	-Evidence of Qualification	Have been replaced by fully qualified NAMCO limit switches, Model EA-180 series. Test Report QTR-105, Rev. 3 applies. These limit switches have been fitted with qualified "Conax" connectors	Qualified
66	II.c	ZS-25-13	NAMCO limit switch for position indication for CTMT purge iso.. valve I-FCV-25-6	-Qualified Life	Not in 10CFR50.49 scope. Equipment located in mild environment.	Deleted

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
67	II.c	ZS-25-12	NAMCO limit switch for position indication for CTMT purge iso. valve I-FCV-25-6	-Qualified Life	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
68	II.c	V-6381	NAMCO limit switch for position indication on valve	-Qualified Life or Replacement	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
69	I.b	ZS-V3661-B ZS-V3661-C	NAMCO limit switch for position indication for drain tank recirc. valve	-Evidence of Qualification	Have been replaced by fully qualified NAMCO limit switches, Model EA-180 series. Test Report QTR-105, Rev. 3 applies. These limit switches have been fitted with qualified "Conax" connectors	Qualified
78	II.c	V-6741	NAMCO limit switch for position indication for waste management system control valve	-Qualified Life	Using Arrhenius methodology, and based on periodic replacement of elastomeric parts, a qualified life of 40 years has been demonstrated	Qualified
71	II.a	V-2585	NAMCO limit switch for valve V-2585 position indication in CVCS	-Aging Degradation -Qualified Life or Replacement -Steam Exposure	Aging degradation addressed using Arrhenius methodology and artificial (accelerated) thermal aging. Qualified life of 40 years demonstrated with periodic replacement of elastomers. No steam in the environment of these switches	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
72	I.b	ZS-HCV3618-B ZS-HCV3628-B ZS-HCV3638-B ZS-HCV3648-B ZS-HCV3618-C ZS-HCV3628-C ZS-HCV3638-C ZS-HCV3648-C	NAMCO limit switch for position indication of safety injection tank leakage drain valves to RWT	-Evidence of Qualification	Limit switches have been replaced by fully qualified NAMCO limit switches, Model EA-180 series. Test Report No. QTR-105, Rev. 3 applies. These limit switches have been fitted with qualified "Conax" connectors	Qualified
73	II.c	V-2512	NAMCO limit switch for CVCS	-Life or Replacement Schedule	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
74	III.b	C11-1 C11-2	General Electric and Square D indicating lights for test circuit indication, main steam trestle	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
75	II.a	ZS-25-4 ZS-25-5	NAMCO limit switch for CTMT purge iso. valve 1-FCV-25-2	-Aging Degradation -Qualified Life or Replacement -Steam Exposure	Aging degradation addressed using Arrhenius methodology and artificial (accelerated) thermal aging. Qualified life of 40 years demonstrated with periodic replacement of elastomers. No steam in the environment at equipment location	Qualified
76	II.c	1-HCV-14-1 1-HCV-14-2 HSE-14-1 HSE-14-2 1-HCV-14-7 ZS-25-2,ZS-25-3	NAMCO limit switch for position indication and control of CTMT iso. valves	-Qualified Life	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
77	IV	FE-1200, 1201, 1202, 1402, 1404	Accelerometer for PORV and SRV position	-None (Documentation not available)	IEC Test Report 517-TR-03, Rev. 2 dated 12/81 documents full qualification of accelerometers under review	To Be Qualified By 9-15-84

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
78	II.c	A) V-6381 B) V-6382	NAMCO limit switch for position indication for waste management system control valves	-Qualified Life	A) Not in 10CFR50.49 scope. Equipment located in mild environment B) Using Arrhenius methodology, and based on periodic replacement of elastomeric parts, a qualified life of 40 years has been demonstrated	A) Deleted B) Qualified
79	I.b	ZS-FCV-23-4-B ZS-FCV-23-4-C ZS-FCV-23-6-B ZS-FCV-23-6-C	NAMCO limit switch for position indication of Stm. Gen. Blowdown iso. valves	-Evidence of Qualification	Limit switches have been replaced by fully qualified NAMCO limit switches, Model EA-180 Series. Test Report QTR-185, Rev. 3 applies. These limit switches have been fitted with qualified "Conax" connectors	Qualified
80	II.a	ZS-25-10 ZS-25-11	NAMCO limit switch for CTMT purge iso. valve 1-FCV-25-5	-Aging Degradation -Qualified Life or Replacement -Steam Exposure	Aging degradation addressed using Arrhenius methodology and artificial (accelerated) thermal aging. Qualified life of 40 years demonstrated with periodic replacement of elastomers. No steam in the environment of these switches	Qualified
81	I.b	ZS-25-6 ZS-25-7 ZS-25-8 ZS-25-9	NAMCO limit switch for position indication of CTMT purge iso. valve	-Evidence of Qualification	Limit switches have been replaced by fully qualified NAMCO limit switches, Model EA-180 Series. Test Report QTR-185, Rev. 3 applies. These limit switches have been fitted with qualified "Conax" connectors	Qualified
82	II.c	V-6554 V-6555	NAMCO limit switch for position indication for waste management system control valves	-Qualified Life	Using Arrhenius methodology, and based on periodic replacement of elastomeric parts, a qualified life of 40 years has been demonstrated	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
83	I.b	ZS-V2515-B ZS-V2515-C ZS-V2516-B ZS-V2516-C	NAMCO limit switch for position indication of letdown stop valve and CTMT iso. valve	-Evidence of Qualification	Limit switches have been replaced by fully qualified NAMCO limit switches, Model EA-180 Series. Test Report QTR-185, Rev. 3 applies. These limit switches have been fitted with qualified "Conax" connectors	Qualified
84	II.c	I-FCV-23-7 I-FCV-23-9	NAMCO limit switch for position indication for CTMT iso. valves	-Qualified Life	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
85	I.b	ZS-FCV-26-1-B ZS-FCV-26-1-C ZS-FCV-26-3-B ZS-FCV-26-3-C ZS-FCV-26-5-B ZS-FCV-26-5-C	NAMCO limit switch for position indication of CTMT air monitoring iso. valve	-Evidence of Qualification	Limit switches have been replaced by fully qualified NAMCO limit switches, Model EA-180 Series. Test Report QTR-185, Rev. 3 applies. These limit switches have been fitted with qualified "Conax" connectors	Qualified
86	II.c	ZS-25-48, -49, -50, -51, -52A, -52B, -53A, -53B ZS-25-54A, -54B, -55A, -55B, -56A, -56B ZS-25-57A, -57B, 58A, -58B, -59A, -59B	NAMCO limit switch for control and position indication for dampers in ECCS ventilation system	-Qualified Life	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
87	II.c	I-FCV-26-2 I-FCV-26-4 I-FCV-26-6	NAMCO limit switch for CTMT iso. valves	-Qualified Life or Replacement	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
88	II.c	V-3200 V-3201 V-3202 V-3203 V-5203 V-5204 V-5205	NAMCO limit switch for valves located in reactor auxiliary building	-Qualified Life or Replacement	A qualified life of 40 years has been demonstrated with periodic replacement of elastomers	Qualified
89	II.a	HVE-6A,-6B HVE-9A,-9B	Buffalo Forge fan with Westinghouse motor for shield building ventilation	-Evidence of Qualification -Radiation	Equipment located in an area where the only harsh parameter is radiation. Radiation addressed using materials analysis to demonstrate qualification	Qualified
98	II.a	LPSI Pump 1A LPSI Pump 1B	Westinghouse Motor. Low pressure safety injection pump	-Adequate Similarity	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
91	III.b	Motor for BA Make-up Pump 1A. Motor for BA Make-Up Pump 1B	General Electric motors for boric acid make-up pumps 1A and 1B	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
92	II.c	Charging Pump 1A, 1B & 1C	Westinghouse motor for CVCS	-Adequate Similarity	Equipment located in an area where the only harsh parameter is radiation. Radiation addressed using materials anaylsis to demonstrate qualification	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
93	II.a	HPSI Pump 1A HPSI Pump 1B HPSI Pump 1C	General Electric motor for HPSI motors	-Evidence of Qualification -Radiation	Equipment located in an area where the only harsh parameter is radiation. G.E. Report 34AB44212 establishes a radiation qualification level well above the required level	Qualified
94	II.a	D-12A, 12, 13, 14, 15, 16,	American Warming and Ventilating Co. and Barber-Colman motor operated ventilation dampers in ECCS area	-Aging Degradation -Qualified Life or Replacement	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
95	II.c	D-23 D-24	American Warming and Ventilating Co. and Barber-Colman motor operated ventilation dampers for shield building	-Aging Degradation -Qualified Life or Replacement	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
96	I.a	CSP-1A CSP-1B	General Electric motor for CTMT spray pumps	-None	Equipment is qualified	Qualified
97	I.a	AFWP-1A AFWP-1B	General Electric motor for AFW pumps	-None	Equipment is qualified	Qualified
98	II.a	HVS-1A, 1B, 1C, 1D	Westinghouse CTMT fan coolers	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement -Aging Simulation	Adequate similarity demonstrated by engineering analysis. Arrhenius methodology used to address aging degradation and simulation. A qualified life of 40 years has been demonstrated	Qualified
99	II.c	PDT-25-13A	Rosemount D/P transmitter for CTMT vacuum relief - operates FLV-25-7	-Aging Degradation -Qualified Life or Replacement	Arrhenius methodology used to address aging degradation. A qualified life of 40 years has been demonstrated	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
100	II.c	PDT-25-1A PDT-25-7A	Fischer & Porter D/P transmitter for differential pressure shield building annules to outside	-Aging Degradation -Qualified Life or Replacement	Arrhenius methodology used to address aging degradation or age susceptible material. A qualified life of 40 years has been demonstrated	Qualified
101	I.b	FT-26-1	Teledyne Hastings Raydist. Flow transmitter for plant vent stack radiation monitoring	-None	Equipment has been deleted due to system redesign	Deleted
102	II.c	FT-2212	Fischer & Porter Flow transmitter for charging pump	-Aging Degradation -Qualified Life or Replacement	Have been replaced by fully qualified Rosemount Model Series D transmitters. Rosemount Qualification Report D8300040 applies	Qualified
103	I.b	FT-89-2A FT-89-2B FT-89-2C	Fischer & Porter Flow transmitter for aux. feedwater pumps 1A, 1B and 1C	-Evidence of Qualification	Have been replaced by fully qualified Rosemount Model Series B and D transmitters. Rosemount Qualification Reports D8300040 and 100025 apply	Qualified
104	II.b	LT-9823D	Fischer & Porter Level transmitter for Steam Generator 1B	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement -Aging Simulation -Test Sequence -Test Failures or Anamolies -Test Duration Margin -Spray	Has been replaced by fully qualified Rosemount Model 1153 Series D transmitter. Rosemount Qualification Report No. D8300040 applies	Qualified
105	II.b	LT-9813A LT-9813C	Fischer & Porter Level transmitter for Steam Generator 1A level	-Adequate Similarity -Aging Degradation -Qualified Life -Aging Simulation -Spray -Test Sequence -Test Failures or Anamolies -Test Duration Margin	Have been replaced by fully qualified Rosemount Model 1153 Series D transmitter. Rosemount Test Report D8300040 applies	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
186	II.b	LT-9813B LT-9813D LT-9823A LT-9823B LT-9823C	Fischer & Porter Level transmitter for Steam Generator 1A and 1B	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement -Aging Simulation -Spray -Test Sequence -Test Failures or Anamolies -Test Duration Margin	Have been replaced by fully qualified Rosemount Model 1153 Series D transmitter. Rosemount Qualification Report No. D8300848 applies	Qualified
187	II.b	PT-1182A	Fischer & Porter Pressure transmitter for pressurizer pressure	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement -Aging Simulation -Spray -Test Sequence -Test Failures or Anamolies -Test Duration Margin	Have been replaced by fully qualified Rosemount Model 1153 Series D transmitter. Rosemount Qualification Report No. D8300848 applies	Qualified
188	II.b	PT-1183	Fischer & Porter Pressure transmitter for pressurizer pressure	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement -Aging Simulation -Spray -Test Sequence -Test Failures or Anamolies -Test Duration Margin	Have been replaced by fully qualified Rosemount Model 1153 Series D transmitter. Rosemount Qualification Report No. D8300848 applies	Qualified
189	II.a	PT-1184	Foxboro Pressure transmitter for pressurizer pressure	-Aging Degradation -Qualified Life or Replacement -Duration -Test Duration Margin	Have been replaced by fully qualified Rosemount Model 1153 Series D transmitter. Rosemount Qualification Report No. D8300848 applies	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
110	II.c	PT-87-4A	Fischer & Porter Pressure transmitter for CTMT pressure	-Aging Degradation -Qualified Life or Replacement	Have been replaced by fully qualified Rosemount Model 1153 Series D transmitter. Rosemount Qualification Report No. D8300040 applies	Qualified
111	II.c	PT-2212	Fischer & Porter Pressure transmitter for charging pump discharge header	-Aging Degradation -Qualified Life or Replacement	Have been replaced by fully qualified Rosemount Model 1153 Series D transmitter. Rosemount Qualification Report No. D8300040 applies	Qualified
112	II.c	PT-3388 PT-3389	Fischer & Porter Pressure transmitter for HPSI aux. discharge and HPSI discharge hdr. pres. respectively	-Aging Degradation -Qualified Life or Replacement	Have been replaced by fully qualified Rosemount Model 1153 Series D transmitter. Rosemount Qualification Report No. D8300040 applies	Qualified
113	II.b	PT-1102C	Fischer & Porter Pressure transmitter for pressurizer pressure	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement -Aging Simulation -Spray -Test Sequence -Test Failures or Anamolies -Test Duration Margin	Have been replaced by fully qualified Rosemount Model 1153 Series D transmitter. Rosemount Qualification Report No. D8300040 applies	Qualified
114	II.b	PT-87-2A PT-87-2B PT-87-2C PT-87-2D	Fischer & Porter Pressure transmitter for CTMT pressure	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement -Aging Simulation -Spray -Test Sequence -Test Duration Margin	Will be replaced by fully qualified Rosemount Model 1153 Series D transmitter. Rosemount Qualification Report No. D8300040 applies	To Be Replaced By 3-31-85

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
115	II.b	PT-8813C PT-8813D PT-8823C PT-8823D	Fischer & Porter Pressure transmitter for steam generator	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement -Aging Simulation -Spray -Test Sequence -Test Failures or Anamolies -Test Duration Margin	Have been replaced by fully qualified Rosemount Model 1153 Series D transmitter. Rosemount Qualification Report No. D8300040 applies	Qualified
116	II.b	PT-1102B PT-1102D PT-8813A PT-8813B PT-8823A PT-8823B	Fischer & Porter Pressure transmitter for pressurizer pressure and Steam Generator 1A and 1B pressure	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement -Aging Simulation -Spray -Test Sequence -Test Failures or Anamolies -Test Duration Margin	Have been replaced by fully qualified Rosemount Model 1153 Series D transmitters. Rosemount Qualification Report No. D8300040 applies	Qualified
117	I.b	TT-87-5B	Rosemount temperature transmitter for CTMT sump temperature	-None	Not in 10CFR50.49 scope. Equipment has been relocated in mild environment	Deleted
118	II.c	PDIS-25-11A	Barton D/P indication switch for CTMT to annulus differential pressure	-Aging Degradation -Qualified Life or Replacement	Arrhenius methodology used to address aging degradation. A qualified life of 40 years has been demonstrated	Qualified
119	II.c	PDIS-25-2A	Barton D/P indication switch for CTMT to outside air differential	-Aging Degradation -Qualified Life or Replacement	Arrhenius methodology used to address aging degradation. A qualified life of 40 years has been demonstrated	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
120	II.a	PDIS-82-1	ITT/Barton D/P indicating switch for regen. HX flow	-Aging Degradation -Qualified Life -Spray -Functional Testing -Instrument Accuracy	Not in 10CFR 50.49 Scope. Equipment does not perform any safety function	Deleted
121	III.b	FS-25-15A FS-25-15B	Power Engineering and Equipment Co. flow switch for control for shield building isolation fans	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
122	II.c	FIS-14-12A FIS-14-12B FIS-14-12C FIS-14-12D	Barton flow switch for component cooling water from CTMT air recirc.	-Aging Degradation -Qualified Life or Replacement	Arrhenius methodology used to address aging degradation. A qualified life of 40 years has been demonstrated	Qualified
123	III.b	PS-5A, PS-5B, PS-7A, PS-7B PS-6 for HCV-88-1A and PS-5A, PS-5B, PS-7A, PS-7B for HCV-88-1B	United Electric Pressure switch for control of MSIVs	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
124	II.a	PS-23-3,-5	United Electric Pressure switch for steam generator blowdown isolation	-Evidence of Qualification	Equipment is located in an area where the only harsh parameters are temperature and radiation. Qualification for temperature demonstrated by engineering analysis and radiation resistance capability demonstrated using materials analysis based on manufacturers materials list	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
125	III.b	TS-16-1A1 TS-88-781	United Electric Temperature switches for control room outside air intake	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
126	II.a	TE-1111X	Rosemount Temperature element for loop 1A hot leg	-Evidence of Qualification -Aging Degradation -Qualified Life or Replacement -Peak Temperature -Peak Pressure -Duration -Profile Enveloped -Steam Exposure	Not in 10CFR50 scope. Safety function has been eliminated due to system redesign	Deleted
127	II.a	TE-1121X	Rosemount Temperature element for loop 1B hot leg	-Evidence of Qualification -Aging Degradation -Qualified Life or Replacement -Peak Temperature -Peak Pressure -Duration -Profile Enveloped -Steam Exposure	Not in 10CFR50 scope. Safety function has been eliminated due to system redesign	Deleted

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
128	II.a	TE-1112CA TE-1112CB TE-1112HA TE-1122CA TE-1122CB TE-1122HA	Rosemount Resistance temperature detector for reactor coolant loops	-Evidence of Qualification -Aging Degradation -Qualified Life or Replacement -Peak Temperature -Peak Pressure -Duration -Profile Enveloped -Steam Exposure -Radiation	Replaced with fully qualified Weed Model SP 612-2A-C-4L-C-18-8-8. Weed Test Report 548-8854-2, Rev. B dated 10/21/82	Qualified
129	II.a	TE-1115	Rosemount Resistance temperature detector for loop 1A1 cold leg temperature	-Adequate Similarity -Aging Degradation -Qualified Life or Replacement -Instrument Accuracy -Functional Testing	Not in 10CFR50 scope. Safety function has been eliminated due to system redesign	Deleted
138	II.a	TE-1111Y	Rosemount Resistance temperature detector for loop 1A2 cold leg temperature	-Aging Degradation -Qualified Life or Replacement -Evidence of Qualification -Peak Temperature -Peak Pressure -Duration; -Steam Exposure -Profile Enveloped	Not in 10CFR50 scope. Safety function has been eliminated due to system redesign	Deleted
131	II.a	A) TE-1112HB TE-1122HB B) TE-1112CC TE-1112CD TE-1112HC TE-1112HD,TE-1121Y TE-1122CC,TE-1122CD TE-1122HC,TE-1122HD TE-1125	Rosemount RTD for reactor coolant hot leg and cold leg temperature signals	-Evidence of Qualification -Aging Degradation -Qualified Life or Replacement -Duration -Peak Temperature -Peak Pressure -Profile Enveloped -Steam Exposure	A) TE-1112HB and TE-1122HB have been replaced with fully qualified Weed Model SP 612-2A-C-4L-C-18-8-8. Weed Test Report 548-8854-2, Rev. B dated 10/12/82 applies. B) Equipment status being evaluated for remaining TEs.	A) Qualified B) To be Qualified by 9-15-84

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
132	I.b	TE/TT-3303Y TE/TT-3303X	Rosemount RTD and transmitter for shutdown heat exchanger 1A and 1B outlet temperature	-Evidence of Qualification	RTDs have been replaced by fully qualified RTD Weed Model 612-2A-C-4L-C-14.5-8-8 and transmitter Rosemount Model 422A-RGA-104AHB relocated to a mild environment. For Weed RTDs, Weed Report 548-8854-2, Rev. B dated 10/21/82 applies	Qualified
133	I.b	TE/TT-3351X TE/TT-3351Y	Rosemount RTD and transmitter for shutdown heat exchanger 1A and 1B outlet temperature	-Evidence of Qualification	RTDs have been replaced by fully qualified RTD Weed Model 612-2A-C-4L-C-14.5-8-8 and transmitter Rosemount Model 442A-RGA-104AHBAHB relocated to a mild environment. For Weed RTDs, Weed Report 548-8854-2, Rev. B dated 10/21/82 applies	Qualified
134	II.a	TE-07-5A, 5B	Rosemount RTD for CTMT sump temperature	-Evidence of Qualification -Adequate Similarity -Aging Degradation -Qualified Life or Replacement -Aging Program -Peak Temperature -Peak Pressure -Profile Enveloped -Steam Exposure -Radiation Criteria -Duration	Equipment located in an area where the only harsh parameters are temperature and radiation. Evidence of qualification and similarity for these parameters demonstrated by engineering analysis. Aging degradation, qualified life and aging program addressed using regression analysis based on Arrhenius methodology. Peak temperature, peak pressure, enveloped profile and steam exposure not applicable because equipment is outside CTMT. Radiation addressed using materials analysis to demonstrate qualification	Qualified
135	I.a	TE-07-3A TE-07-3B	Rosemount RTD for CTMT air temperature	-None	Equipment is qualified	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
136	III.b	HCV-3657	Fisher Controls E/P transducer for control of air supply to HCV-3657	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
137	III.b	FCV-3386	Fisher Controls E/P transducer for control of FCV-3386	-None	Not in 10CFR50.49 scope. Equipment located in mild environment	Deleted
138	I.a	1-A 1-B	Westinghouse hydrogen recombiner for control of hydrogen in CTMT	-None	Equipment is qualified	Qualified
139	I.b	RE-26-28 RE-26-29 RE-26-30	Victoreen Instrument Radiation detector for plant vent stack monitoring system	-None	Equipment replaced. Located in mild environment due to system redesign.	Deleted
148	II.a	RE-26-3, -4, -5, -6	Victoreen Instrument Radiation monitor in reactor building	-Evidence of Qualification -Aging Degradation -Qualified Life or Replacement -Peak Temperature -Peak Pressure -Duration -Profile Enveloped -Spray -Duration Margin -Steam Exposure	Equipment status being evaluated	To Be Qualified By 9-15-84
141	II.a	PLEP-1 ELEP-1	Amphenol Sams Electrical penetrations	-Aging Degradation -Qualified Life or Replacement -Submergence	Not in 10CFR50.49 scope. Does not serve any safety function	Deleted
142	II.a	C-3, C-6, D-18	Conax electrical penetration for low power and control circuits	-Submergence	New Conax Test Report ISP-850 provides documented evidence of satisfactory performance under submerged conditions	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
143	II.a	A1,B1,B3,B4,B5, B6,B7,B8,B9,B18 C1,C4,C5,C7,C8, C10 D1,D2,D3,D4,D6, D7,D8,D9,E1,E3, E5,E7,E9,E18	Gulf General Atomic Inc. Electric penetration for service to CTMT	-Submergence	Demonstrated to be qualified for submergence by the following: Ceramic to copper hermetric seal forms primary seal. Pigtail connections are protected by submergence tested Raychem heat shrink sleeving and is encapsulated in epoxy. Entire assembly is leaktested with helium	Qualified
144	III.b	P11-2 P11-3 P11-36 P11-97	General Electric Terminal block located in mild environment	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted
145	III.b	P11-2, P11-3, P11-36, P11-97	General Electric Terminal block located in harsh environment	-None	These terminal blocks are in scope of 10CFR50.49 and are fully qualified	Qualified
146	II.a	P11-33,34, 37,41,44 45, 46, 47 48, 49, 50, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67	Raychem electrical cable cable splice located in CTMT	-Submergence	Raychem Test Report EDR 5011 provides documented evidence of satisfactory performance under submerged conditions	Qualified
147	III.a	Various	Florida Steel Corp. Junction box for cable termination, relay mounting PB stations, etc.	-None	Not in 10CFR50.49 scope. Does not perform a safety function	Deleted

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
148	III.b	C11-2	General Electric indicating light	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted
149	III.b	C11-3	General Electric indicating light	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted
150	III.b	C11-1 C11-2	General Electric & Square D indicating lights for test circuit indication	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted
151	III.b	None	Terry Turbine control	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted
152	III.b	None	Limit switch	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted
153	III.b	None	Limit switch	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted
154	III.b	None	Limit switch for control of auxiliary feedwater pump 1C turbine	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted
155	III.b	None	Turbine trip and throttle solenoid valve for control of aux. feedwater pump 1C turbine	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted
156	III.b	None	Allen-Bradley turbine trip and throttle contactor for control of aux. feedwater pump 1C turbine	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted
157	III.b	C12-7	General Electric relay for loss of power alarm	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
158	III.b	B-1665	Square D push button switch for circuit test	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted
159	II.a	C18-3	General Electric push button switch	-Life or Replacement Schedule -Aging Degradation -Steam Exposure -Spray	Equipment is no longer in use, and has been disconnected from system	Deleted
160	II.a	C18-2	General Electric push button station inside CTMT	-Aging Degradation -Qualified Life or Replacement -Steam Exposure -Spray	Equipment is no longer in use, and has been disconnected from system	Deleted
161	III.b	C18-3 C18-5	General Electric push button switch	-Aging Degradation -Qualified Life or Replacement -Staem Exposure	Not in 10CFR50.49 scope. Located in mild environment	Deleted
162	II.a	EHC-HVE-6A1, 6A2, 6B1, 6B2	INDECO electrical heating coil located outside CTMT	-Qualifid Life or Replacement	Equipment consists of metalic and inorganic material, neither of which is susceptable to thermal aging. Qualified life is addressed on that basis and replacement is is not required	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
163	II.c	1A-HTR0A 1A-HTR0B 1A-HTR0C	Chromalox electric heater for boric acid make-up tank temperature	-Qualified Life or Replacement	Not in 10CFR50.49 scope. Located in mild environment	Deleted
164	III.b	B-1317 B-1318	Schutte & Koerting test panels for MSIVs	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted
165	II.b	D2-4, -5, -9, D10-33, -41, -50, -52, -53, -60, -61	Raychem electrical cable for various control, low energy and communication circuits	-Submergence	The equipment is qualified for submergence per Raychem letter dated November 27, 1974 and FIRL Report F-C4833-3	Qualified
166	II.b	D1-5, -7 D2-4,-5,-7,-8, -9,-2,-10 D3-3,-5,-6,-7, -8,-9,-10,-11,-12 D4-2,-6,-7	General Cable electrical cable for various control, low energy, and communication circuits	-Submergence	The equipment is qualified for submergence per General Cable letter dated December 17, 1974	Qualified
167	II.a	D1-5, -7, D2-2, D10-5, D10-6	Okonite electrical cable for power and control cable 5kV and 600 volts	-Submergence	The equipment is qualified for submergence per Okonite letter dated November 27, 1974 and FIRL Test Report F-C3694	Qualified
168	II.a	D3-3, -10, -11, -12 D4-6, -7	Rome Cable electrical cable for 300 V instrumentation, communication, computer circuits, and 600 V control and low energy power circuits	-Submergence	The equipment is qualified for submergence per Cyprus letter dated November 26, 1974	Qualified

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
169	II.a	D2-8 D3-3,-5,-7, -8,-9,-18, -11, -12 D4-2,-6,-7 D18-31,-33, -48,-42,-43, -44,-51	Cerro Electrical Cable for control, low energy, and communication circuits	-Adequate Similarity	Cable materials demonstrated to be identical with test specimens, differing only in number of conductors	Qualified
170	I.a	D18-17	BIW Electrical cable for instrumentation circuits	-None	Equipment is qualified	Qualified
171	II.a	D4-14 D5-2	Continental Electrical cable for control low energy and communication circuits	-Submergence	Submergence criteria addressed by cable manufacturer during cable insulation and water absorption tests	Qualified
172	III.b	B-1828	Air Pax Tack Pak local control for aux. feedwater pump	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted
173	I.b	Stack Monitor Cabinet	Victoreen Instrument Cabinet for plant vent stack radiation monitoring	-Evidence of Qualification	Equipment replaced. Located in mild environment due to system redesign.	Deleted
174	III.b	MV-08-3	Allen Bradley motor starter for aux. feedwater turbine steam stop valve	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted
175	I.b	FR-26-1	Bailey Heater flow transmitter for plant vent stack monitoring system	-None Stated	Equipment has been deleted due to system redesign	Deleted
176	I.b	FY-26-1	Teledyne Power Converter process flow signal converter for plant vent stack monitoring system	-None Stated	Equipment has been deleted due to system redesign	Deleted

TER ITEM	NRC CATEGORY	TAG #	COMPONENT DESCRIPTION AND FUNCTION	NRC DEFICIENCY	RESOLUTION	STATUS
177	I.b	FF-26-1	Process square root extractor for plant vent stack monitoring system	-None Stated	Equipment has been deleted due to system redesign	Deleted
178	I.b	FQ-26-1	Veeder Root flow computer for plant vent stack monitoring system	-None Stated	Equipment has been deleted due to system redesign	Deleted
179	II.a	ME-25-1 ME-25-2 MI-25-1 MI-25-2	Phys-Chemical Research Humidity detector for filtration unit in the shield building ventilation system	-Evidence of Qualification	Equipment located in an area where the only harsh parameter is radiation. Radiation qualification demonstrated using materials analysis	Qualified
180	IV	FT-1402 FT-1200,1,2	Amplifier for PORV and SRV position indication	-None	TEC Test Report 517-TR-83, Rev. 2 dated 12/81 documents full qualification of transmitters	Qualified
181	I.b	FE-1402, 1404, 1200, 1201, 1202	Electrical Cable	-None	TEC Test Report 517-TR-83, Rev. 2 dated 12/81 documents full qualification of electric cable	Qualified
182	III.b	B-103B	Woodward turbine control for aux. feedwater pump 1C turbine control	-None	Not in 10CFR50.49 scope. Located in mild environment	Deleted

ATTACHMENT 2

JUSTIFICATION FOR CONTINUED OPERATION

OF COMPONENTS TO BE QUALIFIED

CATEGORY II.a.

Item No. 25

Component: Solenoid Valve

Identification No.: SE-25-11 (SCEW 18M-03)

Function: Control of Containment Vacuum Relief Valve I-FCV-25-8

Analysis:

1) Loss of Coolant Accident

Solenoid valve SE-25-11 is the pilot solenoid for the air operated butterfly valve I-FCV-25-8. Both these valves are located outside of containment in an environment where the only harsh parameters are temperature and radiation. Butterfly valve I-FCV-25-8 provides containment vacuum relief protection and also performs a containment isolation function in the event of a LOCA. Containment vacuum relief valve, I-FCV-25-8, is normally closed, and would open only in the unlikely event of high containment vacuum to relieve excessive external containment vessel pressure.

If the highly improbable condition existed where a high containment vacuum condition caused the containment vacuum relief valves to be open just prior to a loss of coolant accident, the containment vacuum relief valve would automatically close upon receipt of a containment isolation signal within 5 seconds. The pilot solenoid performs its safety function of deenergizing before the harsh environment could have any adverse effect on it.

Pilot solenoid SE-25-11 must be energized to supply air to open containment vacuum relief valve I-FCV-25-8. Deenergizing the pilot solenoid will dump air from the containment vacuum relief valve, causing the valve to automatically stroke to its normally closed position.

Because the containment vacuum relief valve has a spring loaded actuator, failure will result in containment isolation. Furthermore, loss of power to the pilot solenoid or loss of air supply will not cause the containment vacuum relief valve to open.

No significant degradation of a safety function or misleading information to the operator as a result of failure of this equipment under the accident environment resulting from a design basis event will occur.

2) High Energy Line Break

In the event of a high energy line break, the pilot solenoid valve will deenergize upon receipt of a containment isolation signal and close the containment vacuum relief valve, if open, within 5 seconds.

The justifications outlined above apply to both scenarios.

Conclusions:

Continued operation of St. Lucie I with the existing solenoid used to control the containment vacuum relief valve is justified for the following reasons:

a) The containment vacuum relief valve is normally closed and opened only in the unlikely event of a high containment vacuum condition.

b) In an accident, the solenoid is deenergized by a CIS and required only to dump air to close the containment vacuum relief valve (if open). Isolation occurs within 5 seconds of the accident, and no further operation of the solenoid is required.

c) The containment vacuum relief valve is spring-loaded and fails closed.

CATEGORY II.a.

Item No. 26

Component: Solenoid Valve

Identification No.: SE-25-10 (SCEW 18M-01)

Function: Control of Containment Vacuum Relief Valve I-FCV-25-7

Analysis:

1) Loss of Coolant Accident

Solenoid valve SE-25-10 is the pilot solenoid for the air operated butterfly valve I-FCV-25-7. Both these valves are located outside of containment in an environment where the only harsh parameters are temperature and radiation. Butterfly valve I-FCV-25-7 provides containment vacuum relief protection and also performs a containment isolation function in the event of a LOCA. Containment vacuum relief valve, I-FCV-25-7, is normally closed, and would open only in the unlikely event of high containment vacuum to relieve excessive external containment vessel pressure.

If the highly improbable condition existed where a high containment vacuum condition caused the containment vacuum relief valves to be open just prior to a loss of coolant accident, the containment vacuum relief valve would automatically close upon receipt of a containment isolation signal within 5 seconds. The pilot solenoid performs its safety function of deenergizing before the harsh environment could have any adverse effect on it.

Pilot solenoid SE-25-10 must be energized to supply air to open containment vacuum relief valve I-FCV-25-7. Deenergizing the pilot solenoid will dump air from the containment vacuum relief valve, causing the valve to automatically stroke to its normally closed position..

Because the containment vacuum relief valve has a spring loaded actuator, failure will result in containment isolation. Furthermore, loss of power to the pilot solenoid or loss of air supply will not cause the containment vacuum relief valve to open.

No significant degradation of a safety function or misleading information to the operator as a result of failure of this equipment under the accident environment resulting from a design basis event will occur.

2) High Energy Line Break

In the event of a high energy line break, the pilot solenoid valve will deenergize upon receipt of a containment isolation signal and close the containment vacuum relief valve, if open, within 5 seconds.

The justifications outlined above apply to both scenarios.

Conclusions:

Continued operation of St. Lucie I with the existing solenoid used to control the containment vacuum relief valve is justified for the following reasons:

a) The containment vacuum relief valve is normally closed and opened only in the unlikely event of a high containment vacuum condition.

b) In an accident, the solenoid is deenergized by a CIS and required only to dump air to close the containment vacuum relief valve (if open). Isolation occurs within 5 seconds of the accident, and no further operation of the solenoid is required.

c) The containment vacuum relief valve is spring-loaded and fails closed.

CATEGORY II.a.

Item No. 46

Component: Solenoid Valve

Identification No.: SE-25-3 (SCEW 17M-05)
SE-25-7 (SCEW 17M-09)

Function: Control of Containment Purge Isolation Valves I-FCV-25-2 and I-FCV-25-5

Analysis:

1) Loss of Coolant Accident

The normally closed containment purge isolation valves I-FCV-25-2 and I-FCV-25-5, if open, close to isolate containment upon receipt of a containment isolation signal. Solenoid valves SE-25-3 and SE-25-7 are the pilot solenoids for the air operated butterfly valves I-FCV-25-2 and I-FCV-25-5, respectively. All these valves are located in the containment annulus in an environment where the only harsh parameters are temperature and radiation.

In the unlikely event of a loss of coolant accident occurring when the purge valves are open, a containment isolation signal (CIS) would deenergize the solenoids, dumping air from the purge line isolation valves, causing the valves to shut within 5 seconds. The solenoids perform their safety function before the harsh environment can have an adverse effect on them.

Solenoids SE-25-3 and SE-25-7 must be energized to supply air to open containment purge valves I-FCV-25-2 and I-FCV-25-5, respectively. Deenergizing these solenoids will dump air from their associated containment purge line isolation valve, causing the valve to stroke to their normally closed position.

Because the containment purge isolation valves have spring-loaded actuators, failure will result in containment isolation. Furthermore, loss of power to the solenoid or loss of air supply will not cause the isolation valve to open.

No significant degradation of a safety function or misleading information to the operator as a result of failure of this equipment under the accident environment resulting from a design basis event will occur.

Containment purge isolation valve I-FCV-25-2 is in series with two other butterfly isolation valves, I-FCV-25-1 and I-FCV-25-3 in the containment purge supply line. Containment purge isolation valve I-FCV-25-5 is in series with two other butterfly isolation valves, I-FCV-25-4 and I-FCV-25-6, in the containment purge exhaust line.

2) High Energy Line Break

In the event of a high energy line break, the pilot solenoid valves would deenergize upon receipt of a containment isolation signal and close their associated containment purge isolation valve, if open, within 5 seconds.

The justifications outlined above apply to both scenarios.

Conclusions:

Continued operation of St. Lucie I with the existing solenoids used to control the purge isolation valves is justified for the following reasons:

a) The containment purge isolation valves are normally closed and are only opened to exhaust the containment atmosphere which is usually performed when the reactor is shutdown.

b) In an accident, the solenoids are deenergized and required only to dump air to close the containment purge isolation valve (if open). Isolation occurs within 5 seconds of the accident and no further operation of the solenoids are required.

c) The containment purge isolation valves are spring-loaded and fail closed.

d) Two other redundant isolation valves are located in series with the containment purge isolation valve in each line.

CATEGORY II.a.

Item No. 51

Component: Solenoid Valve

Identification No.: V-2505 (SCEW 4M-64)

Function: Control Air Supply to Pneumatically Operated Valves

Analysis:

1) Loss of Coolant Accident

Reactor coolant pump controlled bleedoff isolation valve, V-2505, is an air operated valve whose air supply is controlled by a solenoid. Both the isolation valve and the associated solenoid are located outside the containment in an area where the environmental parameters are not influenced by either a LOCA or HELB, except for a small increase in the total radiation dose.

In the event of an accident, a containment isolation signal (CIS) would deenergize the solenoid, dumping air from the isolation valve, causing the valve to shut within 5 seconds. The solenoid performs its safety function of deenergizing long before the total radiation dose could increase to the point of having an adverse effect.

Because the reactor coolant pump controlled bleedoff isolation valve has a spring-loaded actuator, failure will result in containment isolation. Furthermore, loss of power to the solenoid or loss of air supply will not cause this isolation valve to open.

No significant degradation of a safety function or misleading information to the operator as a result of failure of this equipment under the accident environment resulting from a design basis event will occur.

Solenoid valve, I-SE-01-1, located in series with V-2505, provides redundant containment isolation in this line.

2) High Energy Line Break

In the event of a high energy line break, the solenoid valve deenergizes upon receipt of a containment isolation signal, and closes the reactor coolant pump controlled bleedoff isolation valve within 5 seconds.

The justifications outlined above apply to both scenarios.

Conclusion

Continued operation of St. Lucie I with the existing solenoid used to control the air supply to containment isolation valve V-2505 is justified for the following reasons:

a) In an accident, the solenoid is deenergized and required only to dump air to close the reactor coolant pump controlled bleedoff isolation valve. Isolation occurs within 5 seconds of the accident and no further operation of the solenoid is required.

b) The reactor coolant pump controlled bleedoff isolation valve is spring-loaded and fails closed.

c) A redundant isolation valve is located in series with the containment isolation valve in the line.

CATEGORY IV

Item No. 77

Component: Accelerometer

Identification No.: FE-1200 FE-1402
FE-1201 FE-1404
FE-1202

Function: PORV and SRV position indication

Analysis:

1) Loss of Coolant Accident

Accelerometers mounted on the safety valve discharge piping of the power operated relief valves and pressurizer safety relief valves provide position indication by detecting acoustic signals generated by flow through the valves. These flow elements actuate no post-accident mitigation components, but simply provide indication of valve position and detection of a possible loss of coolant source. Regulatory Guide 1.97, Revision 3, considers this indication as a Type D Category 2 variable.

The accelerometer manufacturer (TEC-Endevco) has completed all qualification testing and issued a report documenting full environmental qualification. Qualification documentation has been received by FPL, but is still in the review process.

In the interim, until review of qualification documentation is complete, other means exist to determine whether a safety or relief valve is open. Monitoring the following parameters would provide indication of an open safety or relief valve.

a) Discharge Line Temperature - Each of the pressurizer safety valve discharge lines contains a temperature detector (TE-1107, 1108, 1109) for monitoring valve leakage. The common discharge line from the power relief valves also contains a temperature detector (TE-1106). Control room temperature monitoring instrumentation consists of indicator/alarm units (TIA 1107, 1108, 1109 and 1106) for each of these detectors. Small amounts of safety or relief valve leakage will produce a rapidly increasing temperature indication since the discharge piping has a relatively small volume.

b) Quench Tank Water Level and Temperature - Since the safety and relief valves discharge to the pressurizer quench tank, steam leaking through the valves will eventually condense in the quench tank and cause increasing water level and temperature. Level indicator alarm unit LIA-1116 detects this increasing water level change and TIA-1116 detects the corresponding increase in water temperature due to the steam entry into the tank.

Although the above temperature and level detectors are not safety related, and therefore have not been environmentally qualified, they are high-quality commercial grade instrumentation. If a power operated relief valve or pressurizer safety relief valve failed open, indication of this condition would be required at the initiation of this event to alert operators to take appropriate action. In the unlikely event that the accelerometers failed to provide valve position indication, the above nonsafety related detectors should provide reliable indication of a stuck open relief valve at the initiation of the event before the harsh environment has an adverse effect on them.

2) High Energy Line Break

The justifications outlined above apply to both scenarios. The flow elements only provide indication of valve position and actuate no components in mitigation of an accident.

Conclusion:

Continued operation of St. Lucie I with the existing accelerometers is justified for the following reasons:

a) A report documenting full environmental qualification has been issued by the manufacturer.

b) Alternate means exist to determine PORV and SRV position.

May 5, 1983
L-83-285

Item #114 (page 1 of 4)

Component: Pressure Transmitter

Identification No: PT-07-2A, PT-07-2B, PT-07-2C, PT-07-2D

Function: Provide pressure signal from containment.

Analysis:

1) Loss of Coolant Accident

The containment pressure transmitters provide an input to protection logic to initiate the ESFAS. These signals are generated within a few seconds after an accident and will perform their function before environmental conditions will cause a failure. This very short time frame provides reasonable assurance that they will fulfill their function.

2) High Energy Line Break

The containment pressure transmitters provide an input to protection logic to initiate the ESFAS. These signals are generated within a few seconds after an accident and will perform their function before environmental conditions will cause a failure. This very short time frame provides reasonable assurance that they will fulfill their function.

Conclusions:

Interim operation of St. Lucie Unit #1 with the existing containment pressure transmitters is justified for the following reasons:

a) The protection system signals are initiated within a few seconds after the accident and are no longer needed.

b) There are four redundant transmitters inside containment.

ATTACHMENT #2
ADDITIONAL INFORMATION
CONCERNING SAFETY CATEGORY
II.B ITEM #114

By letter dated April 12, 1983, the NRC staff provided FPL with a Technical Evaluation Report (TER) for the Environmental Qualification of Safety-Related Electrical Equipment for St. Lucie Plant, Unit No. 1. The TER identified deficiencies in the environmental qualification documentation associated with a Fisher and Porter (F & P) transmitter that is used to monitor containment pressure. By letter dated May 5, 1983, FPL provided justification for continued operation for this piece of equipment. The NRC letter of July 11, 1983 subsequently requested additional information regarding the qualification of this transmitter. The response to this NRC request is provided below.

The F & P transmitters provide input to:

- Containment Isolation Signal (CIS)
- Safety Injection Actuation Signal (SIAS)
- Containment Spray Actuation Signal (CSAS)
- Reactor Trip

These functions except for CSAS, are also initiated by:

- Thermal Margin/Low Pressure (low reactor coolant system pressure) - reactor trip
- Pressurizer Pressure - SIAS
- High Containment Radiation - CIS

The required protective functions associated with the transmitters occur early in the containment pressure-temperature transient. The $\leq$ 5 psig set point for large breaks occurs immediately after the postulated pipe break (see FSAR @Figure 6.2-2A), and for a small break in about 10 seconds (see FSAR @Figure 6.2-11A for a 0.5 ft.^{2}break). Thus, it is reasonable to conclude that the F & P transmitters will perform their safety function prior to being exposed to significantly harsh environment since:

(1) The safety function is completed at the very onset of the containment pressure-temperature transient.

(2) The safety function initiates containment spray, thus the chemical spray environment occurs after execution of the safety function

(3) Significant radiation release would occur after failure of the Safety Injection System, which is placed in service by the F & P transmitters. A radiation environment of significance is not associated with the safety function.

The operator is also provided with control room containment pressure indication (indication & recording) that derives its signal from two pressure transmitters located outside the containment. Thus, the operator has containment pressure monitoring capability that is independent of the F & P transmitters.

The qualification test of the F & P transmitters is provided in Appendix 3A of the FSAR. The devices installed at St. Lucie 1 are identical with regard to the component parts affected by the harsh environment and the seal. Thus; the qualification tests provided in the FSAR are applicable to the in situ devices.

The qualification test consisted of subjecting the transmitter to a saturated steam environment as follows:

. 75 psig & 320°F for 1 hour
. 45 psig & 292°F for 1 3/4 hrs.
. 5 psig & 228°F for 3 1/2 hrs.

The large break LOCA yields a peak pressure of about 38 psig and 260°F (see FSAR figures 6.2-1A & 1C). The main steam line break peak pressure is about 42 psig and 290°F (see Figures 6.2-12 & 14). Even though the F & P transmitters function before these conditions occur, the qualification test performed for pressure and temperature envelopes the calculated containment conditions with considerable margin.

The F & P transmitters were tested for a radiation environment. The transmitter tested was a different model than the one tested for the steam pressure-temperature environment, but has identical radiation sensitive components. The tests conclude that the instrument should function satisfactory for a total dose up to 1×10^8 rad at a rate not to exceed 5×10^6 rads/day. The dose requirement is 7.6×10^5 rad for the first 15 minutes and the dose rate doesn't exceed 2×10^6 r/hr. for the first 24 hours (see FSAR @Table 3.11-1 & FSAR Page 5.11-7).

The test sequence of radiation and pressure-temperature testing is of interest but not pivotal to the issue of F & P transmitter qualification, since the instrument will not be exposed to a significant radiation environment when it is required to perform its safety function.

Aging degradation has been considered by analyzing failure rate data, using Arrhenius methodology and other appropriate evaluation methods. The analyses indicates that the aging phenonomen will not alter the conclusions to be reached based on the relevant pressure-time and radiation test data provided above.

Therefore, even though the F & P tests results are not in exact accordance with NRC guidelines, it has been shown that the transmitters will function with the proper accuracy in the event of an accident.

Item #114 (page 4 of 4)

FPL

FLORIDA POWER & LIGHT COMPANY

October 19, 1983
L-83-528

Office of Nuclear Reactor Regulation
Attention: Mr. James R. Miller, Chief
Operating Reactors Branch #3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Miller:

Re: St. Lucie Unit 1
Docket No. 50-335
Environmental Qualification
of Safety-Related Electrical Equipment

In a telephone conversation held on September 16, 1983 between Florida Power & Light (FPL) and NRC staff, the NRC requested clarification of information submitted to you in our letter L-83-448, dated August 15, 1983. In the referenced letter, FPL supplied additional justification for continued operation of Franklin Research Center's Technical Evaluation Report (TER) item #114, a Fisher and Porter (F & P) pressure transmitter.

Please be advised that once the subject transmitters have completed their safety function, they will not adversely affect safety systems if they subsequently fail. In addition, FPL will advise its operating staff of the potentially misleading indication supplied by these F & P transmitters in the event of an accident, and to verify all readings with the back-up instrumentation available.

Should you or your staff have any questions regarding this information, please contact us.

Very truly yours,

Joseph W. Williams, Jr.
Vice President
Nuclear Energy Department

JWW/RJS/cab

cc: J. P. O'Reilly, Region II
Harold F. Reis, Esquire

8310240140

CATEGORY II.a

Item No. 131

Component: Resistance Temperature Detector

Identification No: TE-1112CD (SCEW 1I29) TE-1122CC (SCEW 1I28)
TE-1112CC (SCEW 1I27) TE-1122CD (SCEW 1I30)

Function: Provide reactor coolant cold leg temperature signals

Analysis:

1) Loss of Coolant Accident

These RTDs provide cold leg temperature signals to the thermal margin/low-pressure trip circuits of the reactor protection system and additionally provide temperature indication in the control room. One other fully qualified RTD in each cold leg branch provides a temperature signal to the reactor protection system and the subcooled margin monitor and provides control room indication.

Utilizing Arrhenius methodology and considering the most age-limiting RTD material, it was determined that these RTDs have a qualified life in excess of 40 years.

Signals from these RTDs would be input to the reactor protection system at the initiation of an accident. Therefore, these RTDs would accomplish their safety function before the harsh environment could have any adverse effect on them. If these RTDs were to fail after providing signals to the RPS, the subcooled margin monitor (supplied input signals from other qualified RTDs) would provide information to the operator on the coolant's margin from saturated conditions. Additionally, since all cold leg RTDs are indicated in the control room, cold leg branch temperature can be found by monitoring indication from the fully qualified RTDs in the branch line of each cold leg.

Operators will be informed not to rely on indication from these RTDs in the event of an accident.

No significant degradation of a safety function or misleading information to the operator as a result of failure of this equipment under the accident environment resulting from a design basis event will occur.

2) High Energy Line Break

The justification provided above apply to the high energy line break accident.

Conclusion:

Continued operation of St. Lucie I with the existing RTD is justified for the following reasons:

Conclusion:
(Continued)

a) The RTDs accomplish the safety function of providing temperature signals to the reactor protection system at the initiation of the accident before the harsh environment could have any adverse effect on them.

b) After providing temperature signal to the reactor protection system, the RTDs perform no safety function and provide indication only.

c) The other qualified loop RTDs and the subcooled margin monitor provide alternate means of monitoring loop temperature and determining the margin from saturation.

CATEGORY II.a

Item No. 131

Component: Resistance Temperature Detector

Identification No: TE-1112HC (SCEW 1J25) TE-1122HC (SCEW 1I26)
TE-1112HD (SCEW 1I31) TE-1122HD (SCEW 1I32)

Function: Provides reactor coolant hot leg temperature signals

Analysis:

1) Loss of Coolant Accident

These RTDs provide hot leg temperature signals to the thermal margin/low-pressure trip circuits of the reactor protection system and additionally provide temperature indication in the control room. Two other fully qualified RTDs in each hot leg provide temperature signals to the reactor protection system and the subcooled margin monitor and provide control room indication.

Utilizing Arrhenius methodology and considering the most age-limiting RTD material, it was determined that these RTDs have a qualified life in excess of 40 years.

Signals from these RTDs would be input to the reactor protection system at the initiation of an accident. Therefore, these RTDs would accomplish their safety function before the harsh environment could have any adverse effect on them. If these RTDs were to fail after providing signals, the subcooled margin monitor (supplied input signals from other qualified RTDs) would provide information to the operator on the coolant's margin from saturated conditions. Additionally, since all hot leg RTDs are indicated in the control room, hot leg temperature can be found by monitoring indication from the two fully qualified RTDs in each loop.

Operators will be informed not to rely on indication from these RTDs in the event of an accident.

No significant degradation of a safety function or misleading information to the operator as a result of failure of this equipment under the accident environment resulting from a design basis event will occur.

2) High Energy Line Break

The justification provided above apply to the high energy line break accident.

Conclusion:

Continued operation of St. Lucie I with the existing RTD is justified for the following reasons:

a) The RTDs accomplish their safety function of providing temperature signals to the reactor protection system at the initiation of the accident before the harsh environment could have any adverse effect on them.

Conclusion:
(Continued)

b) After providing temperature signals to the reactor protection system, the RTDs perform no safety function and provide indication only.

c) The other qualified loop RTDs and the subcooled margin monitor provide alternate means of monitoring loop temperature and determining the margin from saturation.

CATEGORY II.a

Item No. 131

Component: Resistance Temperature Detector

Identification No: TE-1121Y (SCEW 1I42)

Function: RTD for Loop 1B2 Cold Leg Temperature

Analysis:

1) Loss of Coolant Accident

TE-1121Y is one of three RTDs in cold leg branch 1B2. The other two RTDs in this branch line supply input signals to the reactor protective system and provide control room indication. One of the other two RTDs supplies an input signal to the subcooled margin monitor. During normal operation, RTD TE-1121Y supplies signals to the Tave computer in the reactor regulating system (RRS) and to the automatic CEA withdrawal prohibit subsystem of the control element drive system (CEDS). Since the reactor would be tripped at the initiation of an accident, these rod control signals from RTD TE-1121Y are not required. In an accident, RTD TE-1121Y provides indication only, and is not required to perform any safety function or mitigate the consequences of a design basis accident. Utilizing Arrhenius methodology and considering the most age-limiting RTD material, it was determined that the RTD has a qualified life in excess of 40 years.

If RTD TE-1121Y were to fail during an accident, the subcooled margin monitor (supplied input signals from other qualified RTDs) would provide information to the operator on the coolant's margin from saturated conditions. Additionally, since all cold leg RTDs are indicated in the control room, cold leg branch 1B2 temperature can be found by monitoring indication from RTD TE-1122CB which is fully qualified.

Operators will be informed not to rely on indication from RTD TE-1121Y in the event of an accident.

No significant degradation of a safety function or misleading information to the operator as a result of failure of this equipment under the accident environment resulting from a design basis event will occur.

2) High Energy Line Break

In the event of a high energy line break, RTD TE-1121Y would provide indication only and the justifications provided above apply.

Conclusions:

Continued operation of St. Lucie I with the existing RTD is justified for the following reasons:

a) RTD TE-1121Y performs no safety function and provides indication only.

Conclusions:
(Continued)

b) RTD TE-1122CB and the subcooled margin monitor provide alternate means of monitoring loop temperature and determining the margin from saturation.

CATEGORY II.a

Item No. 131

Component: Resistance Temperature Detector

Identification No: TE-1125 (SCEW 1I49)

Function: RTD for Loop 1B1 Cold Leg Temperature

Analysis:

1) Loss of Coolant Accident

TE-1125 is one of three RTDs in cold leg branch 1B1. The other two RTDs in this branch line supply input signals to the reactor protective system and provide control room indication. One of the other two RTDs supplies an input signal to the subcooled margin monitor. RTD TE-1125 provides indication only, and is not required to perform any safety function or mitigate the consequences of a design basis accident. Utilizing Arrhenius methodology and considering the most age-limiting RTD material, it was determined that the RTD has a qualified life in excess of 40 years.

If RTD TE-1125 were to fail during an accident, the subcooled margin monitor (supplied input signals from other qualified RTDs) would provide information to the operator on the coolant's margin from saturated conditions. Additionally, since all cold leg RTDs are indicated in the control room, cold leg branch 1B1 temperature can be found by monitoring indication from RTD TE-1122CA which is fully qualified.

Operators will be informed not to rely on indication from RTD TE-1125 in the event of an accident.

No significant degradation of a safety function or misleading information to the operator as a result of failure of this equipment under the accident environment resulting from a design basis event will occur.

2) High Energy Line Break

In the event of a high energy line break, RTD TE-1125 would provide indication only and the justifications provided above apply.

Conclusions:

Continued operation of St. Lucie I with the existing RTD is justified for the following reasons:

a) RTD TE-1125 performs no safety function and provides indication only.

b) RTD TE-1122CA and the subcooled margin monitor provide alternate means of monitoring loop temperature and determining the margin from saturation.

CATEGORY II.a

Item No. 140

Component: Containment Radiation Monitors

Identification No.: RE-26-3 (SCEW 1311), RE-26-4 (SCEW 1312), RE-26-5 (SCEW 1313), RE-26-6 (SCEW 1314)

Function: Radiation Monitoring in Containment

Analysis:

1) Loss of Coolant Accident

Radiation monitors RE-26-3, 4, 5, 6, provide signal inputs to initiate containment isolation (CIS) on a high radiation signal. These radiation monitors also provide indication of containment radiation levels in the control room.

In an accident, the radiation monitors would provide signal inputs to CIS within seconds. The radiation monitors perform their safety function of initiating CIS before the harsh environment can have an adverse effect on them. If the radiation monitors were to fail after initiating the containment isolation signal, long-term containment radiation monitoring could be accomplished by using the safety related high range containment radiation monitors. The high range containment radiation monitors provide continuous indication and recording in the control room. Operators will be informed to rely only on indication from the high range containment radiation monitors, in the event that post-LOCA monitoring is required, until radiation monitors RE-26-3, 4, 5, 6 are qualified or replaced with fully qualified monitors.

No significant degradation of a safety function or misleading information to the operator as a result of failure of this equipment under the accident environment resulting from a design basis event will occur.

2) High Energy Line Break

For the high energy line break accident, no credit is taken for the radiation monitors initiating containment isolation (CIS). The radiation monitors only provide indication of containment radiation levels. As outlined above for the loss of coolant accident, long-term containment radiation monitoring could be accomplished by using the safety related high range containment radiation monitors, provided radiation levels reached 1R/hr.

Conclusions:

Continued operation of St. Lucie I with the existing radiation monitors is justified for the following reasons:

a) In the event of a LOCA, the radiation monitors would initiate CIS within seconds. No further control functions of the radiation monitors are required. For a high energy line break accident, no credit is taken for the radiation monitors performing any control functions.

b) The high range containment radiation monitors provide safety related indication in the control room for long-term containment radiation monitoring.

ATTACHMENT 3

CURRENT 10 CFR 50.49 LIST

TAG #	TER ITEM	COMPONENT DESCRIPTION AND FUNCTION	STATUS
1-A 1-B	138	Westinghouse hydrogen recombiner for control of hydrogen in CTMT	Qualified
A1,B1,B3,B4,B5, B6,B7,B8,B9,B10 C1,C4,C5,C7,C8, C10 D1,D2,D3,D4,D6, D7,D8,D9,E1,E3, E5,E7,E9,E10	143	Gulf General Atomic Inc. Electric penetration for service to CTMT	Qualified
AFWP-1A AFWP-1B	97	General Electric motor for AFW pumps	Qualified
C-3, C-6, D-10	142	Conax electrical penetration for low power and control circuits	Qualified
CSP-1A CSP-1B	96	General Electric motor for CTMT spray pumps	Qualified
Charging Pump 1A, 1B & 1C	92	Westinghouse motor for CVCS	Qualified
D1-5, -7 D2-4,-5,-7,-8, -9,-2,-10 D3-3,-5,-6,-7, -8,-9,-10,-11,-12 D4-2,-6,-7	166	General Cable electrical cable for various control, low energy, and communication circuits	Qualified

TAG #	IER ITEM	COMPONENT DESCRIPTION AND FUNCTION	STATUS
D1-5, -7, D2-2, D18-5, D18-6	167	Okonite electrical cable for power and control cable 5kV and 600 volts	Qualified
D18-17	170	BIW Electrical cable for instrumentation circuits	Qualified
D2-4, -5, -9, D18-33, -41, -58, -52, -53, -60, -61	165	Raychem electrical cable for various control, low energy and communication circuits	Qualified
D2-8 D3-3,-5,-7, -8,-9,-10, -11, -12 D4-2,-6,-7 D18-31,-33, -40,-42,-43, -44,-51	169	Cerro Electrical Cable for control, low energy, and communication circuits	Qualified
D3-3, -10, -11, -12 D4-6, -7	168	Rome Cable electrical cable for 300 V instrumentation, communication, computer circuits, and 600 V control and low energy power circuits	Qualified
D4-14 D5-2	171	Continental Electrical cable for control low energy and communication circuits	Qualified
EHC-HVE-6A1, 6A2, 6B1, 6B2	162	INDECO electrical heating coil located outside CIAT	Qualified

TAG #	TER ITEM	COMPONENT DESCRIPTION AND FUNCTION	STATUS
FE-1288, 1281, 1282,1482,1484	77	Accelerometer for PORV and SRV POSITION (TEC-Endevco)	To Be Qualified By 9-15-84
FE-1482, 1484, 1288, 1281, 1282	181	Electrical Cable (TEC-Endevco)	Qualified
FIS-14-12A FIS-14-12B FIS-14-12C FIS-14-12D	122	Barton flow switch for component cooling water from CIRI air recirc.	Qualified
FT-89-2A FT-89-2B FT-89-2C	183	Rosemount Flow transmitter for aux. feedwater pumps 1A, 1B and 1C	Qualified
FT-1482 FT-1288,1,2	188	Amplifier for PORV and SRV position indication (TEC-Endevco)	Qualified
FT-2212	182	Rosemount Flow transmitter for charging pump	Qualified
HCV-3618 HCV-3628 HCV-3638	52	ASCO solenoid valve for safety injection tanks 1A2, 1A1 and 1B1 leakage drains to RWT	Qualified
HCV-3648	53	ASCO solenoid valves. Safety injection tank 1B2 leakage drain to RWT	Qualified
HPSI Pumps 1A,1B & 1C	93	General Electric motor for HPSI motors	Qualified

TAG #	TER ITEM	COMPONENT DESCRIPTION AND FUNCTION	STATUS
HVE-6A,-6B HVE-9A,-9B	89	Buffalo Forge fan with Westinghouse motor for shield building ventilation	Qualified
HVS-1A, 1B, 1C, 1D	98	Westinghouse CTMT fan coolers	Qualified
I-FCV-23-3 I-FCV-23-5	37	ASCO solenoid valve for CTMT iso. Stm. Gen. blowdown	Qualified
I-FCV-23-3 I-FCV-23-5	68	NAMCO limit switch for CTMT iso. valves	Qualified
I-FCV-23-4 I-FCV-23-6	36	ASCO solenoid valve for CTMT iso. Stm. Gen. blowdown	Qualified
I-FCV-25-11 I-FCV-25-12 I-FCV-25-13	16	Limitorque motorized valve actuator for S8VS valve	Qualified
I-FCV-25-14 I-FCV-25-16	4	Limitorque motorized valve actuator for control room air intake	Qualified
I-FCV-25-3 I-FCV-25-4	43	AVCO solenoid valve for CTMT iso. Stm. Gen. blowdown	Qualified
I-FCV-26-1 I-FCV-26-3 I-FCV-26-5	49	ASCO Solenoid valve for CTMT iso. Stm. Gen. blowdown	Qualified

TAG #	IER ITEM	COMPONENT DESCRIPTION AND FUNCTION	STATUS
1-FSE-27-1	29	Valcor solenoid valve for system hydrogen sampling	Qualified
1-FSE-27-2 1-FSE-27-3 1-FSE-27-4 1-FSE-27-5 1-FSE-27-6 1-FSE-27-7	32	Valcor solenoid valve for system hydrogen sampling	Qualified
1-MV-07-2A 1-MV-07-2B	15	Limitorque motorized valve actuator for recirc. suction valve	Qualified
1-MV-14-5 1-MV-14-6 1-MV-14-8	6	Limitorque motorized valve actuator for iso. valve	Qualified
1-MV-15-1 1-MV-18-1	7	Limitorque motorized valve actuator for control isolation valve	Qualified
1-SE-01-1	34	Target Rock solenoid valve for RCP bleed-off iso.	Qualified
LT-9813A LT-9813C	185	Rosemount Flow transmitter for Steam Generator 1A level	Qualified
LT-9813B LT-9813D LT-9823A LT-9823B LT-9823C	186	Rosemount Flow transmitter transmitter for Steam Generator 1A and 1B	Qualified

TAG #	TER ITEM	COMPONENT DESCRIPTION AND FUNCTION	STATUS
LT-9823D	184	Rosemount Flow transmitter for Steam Generator 1B	Qualified
ME-25-1 ME-25-2 MI-25-1 MI-25-2	179	Phys-Chemical Research Humidity detector for filtration unit in the shield building ventilation system	Qualified
P11-2, P11-3, P11-36, P11-97	145	General Electric terminal block located in harsh environment	Qualified
P11-33,34 37,41,44'67 45, 46, 47 48, 49, 50, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66,	146	Raychem electrical cable cable splice located in CTMT	Qualified
PDIS-25-11A	118	Barton D/P indication switch for CTMT to annulus differential pressure	Qualified
PDIS-25-2A	119	Barton D/P indication switch for CTMT to outside air differential	Qualified

TAG #	TER ITEM	COMPONENT DESCRIPTION AND FUNCTION	STATUS
PDI-25-13A	99	Rosemount D/P transmitter for CIMT vacuum relief - operates FLV-25-7	Qualified
PDT-25-1A PDI-25-7A	100	Fischer & Porter D/P transmitter for differential pressure shield building annules to outside	Qualified
PS-23-3,-5	124	United Electric Pressure switch for steam generator blowdown isolation	Qualified
PT-07-2A PT-07-2B PT-07-2C PT-07-2D	114	Fisher & Porter Pressure transmitter for CIMT pressure	To Be Replaced By 3-31-85
PT-07-4A	110	Rosemount pressure transmitter for CIMT pressure	Qualified
PT-1102A	107	Rosemount pressure transmitter for pressurizer pressure	Qualified
PT-1102B PT-1102D PT-0013A PT-0013B PT-0023A PT-0023B	116	Rosemount pressure transmitter for pressurizer pressure and Steam Generator 1A and 1B pressure	Qualified
PT-1102C	113	Rosemount pressure transmitter for pressurizer pressure	Qualified

TAG #	TER ITEM	COMPONENT DESCRIPTION AND FUNCTION	STATUS
PT-1103	108	Rosemount pressure transmitter for pressurizer pressure	Qualified
PT-1104	109	Rosemount pressure transmitter for pressurizer pressure	Qualified
PT-2212	111	Rosemount pressure transmitter for charging pump discharge header	Qualified
PT-3308 PT-3309	112	Rosemount pressure transmitter for HPSI aux. discharge and HPSI discharge hdr. pres. respectively	Qualified
PT-8013C PT-8013D PT-8023C PT-8023D	115	Rosemount pressure transmitter for steam generator	Qualified
RE-26-3, -4, -5, -6	148	Victoreen Instrument Radiation monitor in reactor building	To Be Qualified By 9-15-84
SE-25-10	26	ASCO Solenoid valve for CTMT vacuum relief valve 1-FCV-25-7	To Be Qualified By 9-15-84
SE-25-11	25	ASCO solenoid valve for CTMT vacuum relief valve 1-FCV-25-8	To Be Qualified By 9-15-84
SE-25-3 SE-27-7	46	AVCO Solenoid valve for CTMT sump iso. valve	To Be Qualified By 9-15-84

TAG #	TER ITEM	COMPONENT DESCRIPTION AND FUNCTION	STATUS
TE-07-3A TE-07-3B	135	Rosemount RTD for CTMT air temperature	Qualified
TE-07-5A, 5B	134	Rosemount RTD for CTMT sump temperature	Qualified
TE-25-37 thru TE-25-48	None	Gordon Thermocouple for Shield Bldg. Vent. Sys.	Qualified
TE-1112CA TE-1112CB TE-1112HA TE-1122CA TE-1122CB TE-1122HA	128	Weed Resistance temperature detector for reactor coolant loops	Qualified
A) TE-1112HB TE-1122HB	131	A) Weed RTD for reactor coolant hot leg temperature signals	A) Qualified
B) TE-1112HC TE-1122HC TE-1112HD TE-1122HD TE-1112CC TE-1122CC TE-1112CD TE-1122CD TE-1125 TE-1121Y		B) Rosemount RTD for reactor coolant hot leg and cold leg temperature signals	B) To be qualified By 9-15-84

TAG #	TER ITEM	COMPONENT DESCRIPTION AND FUNCTION	STATUS
TE/TT-3383Y TE/TT-3383X	132	Weed RTD and transmitter for shutdown heat exchanger 1A and 1B outlet temperature	Qualified
TE/TT-3351X TE/TT-3351Y	133	Weed RTD and transmitter for shutdown heat exchanger 1A and 1B outlet temperature	Qualified
V-2505	51	ASCO Solenoid valve for control of RCP bleed-off iso. valve	To Be Qualified By 9-15-84
V-2505	71	NAMCO limit switch for valve V-2505 position indication in CVCS	Qualified
V-2515 V-2516 V-3661	54	ASCO solenoid valves. Letdown CTMT iso., recirc. drain tank valves	Qualified
V-3200 V-3201 V-3202 V-3203 V-5203 V-5204 V-5205	88	NAMCO limit switch for valves located in reactor auxiliary building	Qualified
V-6302	78	NAMCO limit switch for position indication for waste management system control valves	Qualified

TAG #	TER ITEM	COMPONENT DESCRIPTION AND FUNCTION	STATUS
V-6554 V-6555	82	NAMCO limit switch for position indication for waste management system control valves	Qualified
V-6741	78	NAMCO limit switch for position indication for waste management system control valve	Qualified
V3480 V3651	14	Limitorque motorized valve actuator for shutdown cooling suction valve	Qualified
V3481 V3652	13	Limitorque motorized valve actuator for shutdown cooling suction valve	Qualified
V3653 V3655	12	Limitorque motorized valve actuator for HPSI discharge cross-over valve	Qualified
ZS-25-10 ZS-25-11	88	NAMCO limit switch for CTMT purge iso. valve 1-FCV-25-5	Qualified
ZS-25-14 ZS-25-15 ZS-25-16 ZS-25-17	61	NAMCO limit switches for FCV-25-7 and FCV-25-8	Qualified
ZS-25-4 ZS-25-5	75	NAMCO limit switch for CTMT purge iso. valve 1-FCV-25-2	Qualified

TAG #	TER ITEM	COMPONENT DESCRIPTION AND FUNCTION	STATUS
ZS-25-6 ZS-25-7 ZS-25-8 ZS-25-9	81	NAMCO limit switch for position indication of CIMI purge iso. valve	Qualified
ZS-FCV-23-4-B ZS-FCV-23-4-C ZS-FCV-23-6-B ZS-FCV-23-6-C	79	NAMCO limit switch for position indication of Stm. Gen. Blowdown iso. valves	Qualified
ZS-FCV-26-1-B ZS-FCV-26-1-C ZS-FCV-26-3-B ZS-FCV-26-3-C ZS-FCV-26-5-B ZS-FCV-26-5-C	85	NAMCO limit switch for position indication of CIMI air monitoring iso. valve	Qualified
ZS-HCV3618-B ZS-HCV3628-B ZS-HCV3638-B ZS-HCV3648-B ZS-HCV3618-C ZS-HCV3628-C ZS-HCV3638-C ZS-HCV3648-C	72	NAMCO limit switch for position indication of safety injection tank leakage drain valves to RWT	Qualified
ZS-PCV-1108E-B ZS-PCV-1108E-C ZS-PCV-1108F-B ZS-PCV-1108F-C	65	NAMCO limit switch for position indication for pressurizer spray valve	Qualified

TAG #	TER ITEM	COMPONENT DESCRIPTION AND FUNCTION	STATUS
ZS-V2515-B ZS-V2515-C ZS-V2516-B ZS-V2516-C	83	NAMCO limit switch for position indication of letdown stop valve and CTMT iso. valve	Qualified
ZS-V3661-B ZS-V3661-C	69	NAMCO limit switch for position indication for drain tank recirc. valve	Qualified