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Writer's Direct Dial Number

May 18, 1981  
LIL 161

Office of Nuclear Reactor Regulation  
Attn: Mr. John F. Stolz, Chief  
Operating Reactors Branch No. 4  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

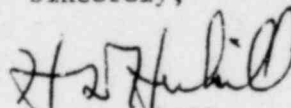


Dear Sir:

Three Mile Island Nuclear Station, Unit 1 (TMI-1)  
Operating License No. DPR-50  
Docket No. 50-289  
Equipment Qualification for Small Breaks

This letter is in response to your letter dated May 1, 1981 which requested information on environmental qualification for equipment needed to respond to design basis small break loss of coolant accidents (SB LOCA). Break sizes between  $0.01 \text{ FT}^2$  and  $0.5 \text{ FT}^2$  have been addressed considering a loss of offsite power, loss of Main Feedwater, and a worst case single failure. The adverse environmental parameters associated with the worst case SB LOCA have also been addressed. The qualifications of the various equipment has been referenced from our response to IE Bulletin 79-01B dated January 30, 1981 (LIL 026).

Sincerely,

  
H. D. Hickill  
Director, TMI-1

HDH:CWS:hh  
Attachment

cc: L. Barrett  
H. Silver  
R. Jacobs

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Acc'd  
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Equipment Qualification  
for Small Break Loss of Coolant Accidents (SB LOCA)

The essential systems and components list consists of those Class IE electrical items, located in a SB LOCA harsh environment that are required to bring the plant to a safe shutdown. The following systems, or portions thereof, from the response to IE Bulletin 79-01B are required:

- Main Steam
- Makeup and Purification
- Decay Heat Removal
- Reactor Building Isolation
- Reactor Protection
- Engineered Safeguards Actuation
- Reactor Building Emergency Cooling
- Core Flood
- Nuclear Services Closed Loop Cooling
- Additional Accident Monitoring Equipment

The following systems from the response to IE Bulletin 79-01B are required but are not located in a SB LOCA harsh environment:

- Emergency Feedwater
- Decay Heat Closed Loop Cooling
- Reactor Building Emergency Cooling River Water

The analysis has considered the worst single failure in addition to the loss of offsite power which results in a loss of Main Feedwater. The worst single failure is the loss of one emergency diesel generator. This results in only one reactor building fan coil unit being available for cooling.

The Component List Sheets are arranged by system. The equipment qualification is based upon our January 30, 1981 response to IE Bulletin 79-01B. The attached table makes appropriate reference to the submission for each component. The building location is shown for each component including the common equipment. The only harsh environments resulting from the small break LOCA are those in the Reactor Building and the Auxiliary Building. The most severe small break LOCA harsh environment is shown for each component on the Component List Sheets. For components located in the Auxiliary Building the only harsh environment is radiation. The remarks column provides qualification information in addition to that previously submitted. Where there is no comment or reference in the remarks column, the SER of March 24, 1981 indicated no deficiency that would be applicable for those small break LOCA's.

The evaluation has considered break sizes in the range from  $0.01 \text{ FT}^2$  to  $0.5 \text{ FT}^2$ . The lower limit of  $0.01 \text{ FT}^2$  insures that emergency feedwater will be activated, since it is required for breaks smaller than  $0.02 \text{ FT}^2$ . The most severe credible small break is that of the largest Reactor Coolant System branch line with a cross-sectional area of less than  $0.5 \text{ FT}^2$ . The 14 inch diameter core flood line which has a break area of  $0.44 \text{ FT}^2$  is the largest such line. This break results in a reactor building peak pressure of slightly below 30 PSIG. The Reactor Building Spray System will not activate until 30 psig is reached so chemical spray on the equipment is not considered. The Reactor Building pressure and temperature resulting from this  $0.44 \text{ FT}^2$  break are assumed as an upper bound for qualification requirements for the equipment.

The calculation of the accumulated radiation dose is based on the degree of fuel failures predicted for a  $0.44 \text{ FT}^2$  break (i.e., no fuel failures beyond those assumed in the FSAR for worst case normal operation is predicted to occur by licensing basis SB LOCA analyses). A methodology similar to that of Appendix D to NUREG 0588 was then used to evaluate the equipment radiation exposure due to the small break fuel failures. The 40 year integrated dose was added to the 180 day post accident dose to obtain the total dose.

COMPONENT LIST NOTES

- Note 1 - SUBMERGENCE - Valve will perform its function of containment isolation prior to becoming submerged.
- Note 2 - RADIATION  
DEGRADATION DOR Guidelines Appendix C, Table C-1 were used in the evaluation conducted. Other documentation was also reviewed where DOR Guidelines did not address specific materials or where more definitive data was available elsewhere. Review was based upon 80% retention of the appropriate property based upon the prudent engineering judgement of the materials function. The January 30, 1981 submittal contains supplemental pages to each Systems Component Evaluation Worksheet where a materials evaluation was done stating the materials, the documentation reference, and the radiation valve from that reference.
- Note 3 - REFER TO LER 80-17 - Qualification of motor brakes for certain Limitorque operators.
- Note 4 - RELOCATION - Equipment was relocated to an elevation above the calculated Flood Level. New transmitters LT-775, 776, 788 and LT-789 are being installed for control room and remote shutdown panel indication. These Rosemount 1153D type transmitters are undergoing NUREG-0588 Cat. #1 qualification program (NRC EQ Branch participation).
- Note 5 - MODEL PL-14B2 - Used on Rosemount narrow range RC pressure transmitters.
- Note 6 - MODEL SA-1000 - New electrical seal assemblies are being installed on the other 79-01B listed transmitters, RTD(s), and pressure switches located inside containment. Qualification to 75 PSIG, 340°F, 100% humidity and  $2 \times 10^8$ R per Conax Bulletin SA-1000/IPS-409/IPS-325.
- Note 7 - RB ENVIRONMENT - 30 PSIG/245°F/100% humidity/ $5.4 \times 10^4$ R.
- Note 8 - FOXBORO TRANSMITTER  
POTENTIAL DEFICIENCIES - The Foxboro transmitters used at TMI-1 are the 4-20 mA type and are not subject to the concern identified by NRC letter dated April 23, 1981 or IE Circular 81-06 for 10-50mA type transmitters.

COMPONENT LIST

<u>System</u> Main Steam						
<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
SP6A-PT1	OTSG Discharge Press Transmitter	RB	EDS Vol. I MS Sheet 9	Note 7	Note 8	Yes
SP6A-PT2	OTSG Discharge Press Transmitter	RB	EDS Vol. I MS Sheet 10	"	"	"
SP6B-PT1	OTSG Discharge Press Transmitter	RB	"	"	"	"
SP6B-PT2	OTSG Discharge Press Transmitter	RB	"	"	"	"



COMPONENT LISTSystem Make-up and Purification

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
MU-P1A	Pump Motor	AB	EDS Vol. I MU Sheet 1	$3.5 \times 10^4 R$	-	Yes
MU-P1B	Pump Motor	AB	" 2	"	-	"
MU-P1C	Pump Motor	AB	" 3	"	-	"
MU-P2A	Pump Motor (Aux. Oil)	AB	" 4	"	-	"
MU-P2B	Pump Motor (Aux. Oil)	AB	" 5	"	-	"
MU-P2C	Pump Motor (Aux. Oil)	AB	" 6	"	-	"
MU-P3A	Pump Motor (Main Oil)	AB	" 7	"	-	"
MU-P3B	Pump Motor (Main Oil)	AB	" 8	"	-	"
MU-P3C	Pump Motor (Main Oil)	AB	" 9	"	-	"
MU-P4A	Pump Motor (Gear Oil)	AB	" 10	"	-	"
MU-P4B	Pump Motor (Gear Oil)	AB	" 11	"	-	"
MU-P4C	Pump Motor (Gear Oil)	AB	" 12	"	-	"
MU-V-2A	Let down cooler outlet Valve Motor Operator	RB	" 13	Note 7	Note 1	"
MU-V-2B	Letdown cooler outlet Valve Motor Operator	RB	" 14	Note 7	Note 1	"
LSA/MUV-3	Letdown cooler outlet Valve Limit Switch	AB	" 15	$1.8 \times 10^4 R$	Note 2	"

COMPONENT LISTSystem Make-up and Purification

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
LSB/MUV-3	Letdown cooler outlet Valve Limit Switch	AB	EDS Vol. I MU Sheet 16	1.8 x 10 <sup>4</sup> R	Note 2	Yes
SV/MUV-3	Letdown cooler outlet Valve Solenoid Valve	AB	" 17	"	Note 2	"
MU-V-12	Pump Suction Valve Motor Operator	AB	" 18	1.8 x 10 <sup>4</sup> R	-	"
MU-V-14A	Pump Suction From BWST Valve Motor Operator	AB	" 19	1.8 x 10 <sup>4</sup> R	-	"
MU-V14B	Pump Suction From BWST Valve Motor Operator	AB	" 20	1.8 x 10 <sup>4</sup> R	-	"
MU-V16A	Pump discharge Valve Motor Operator	AB	" 21	1.8 x 10 <sup>4</sup> R	-	"
MU-V-16B	Pump discharge Valve Motor Operator	AB	" 22	"	-	"
MU-V-16C	Pump discharge Valve Motor Operator	AB	" 23	"	-	"
MU-V-16D	Pump discharge Valve Motor Operator	AB	" 24	"	-	"
SV/MUV-18	Charging line isolation valve-Solenoid Valve	AB	" 25	"	Note 2	"



COMPONENT LIST

System Make-up and Purification

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
LSA/MUV-18	Charging Line Isolation Valve - Limit Switch	AB	EDS Vol. I MU Sheet 26	1.8 x 10 <sup>4</sup> R	Note 2	Yes
LSB/MUV-18	Charging Line Isolation Valve - Limit Switch	AB	" 27	"	"	"
LSA/MUV-20	Seal Isolation Valve Limit Switch	AB	" 28	"	"	"
LSB/MUV-20	Seal Isolation Valve Limit Switch	AB	" 29	"	"	"
SV/MUV-20	Seal Isolation Valve Solenoid Valve	AB	" 30	"	"	"
MU-V-25	RCP Letdown Cooler Isolation Valve Motor Operator	RB	" 31	Note 7	-	"
LSA/MUV-26	RCP Letdown Cooler Isolation Valve - Limit Switch	AB	" 32	3.5 x 10 <sup>4</sup> R	Note 2	"
LSB/MUV-26	RCP Letdown Cooler Isolation Valve - Limit Switch	AB	" 33	"	"	"
SV/MUV-26	RCP Letdown Cooler Isolation Valve - Solenoid Valve	AB	" 34	"	"	"
MU-V-36	Recirculation Valve Motor Operator	AB	" 35	1.8 x 10 <sup>4</sup> R	-	"
MU-V-37	Recirculation Valve Motor Operator	AB	" 36	"	-	"

COMPONENT LIST

<u>System</u> <u>Make-up and Purification</u>						
<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
PS480A	Pressure Switch Lube Oil	AB	EDS Vol. I MU Sheet 37	3.5 x 10 <sup>4</sup> R	Note 2	Yes
PS480B	Pressure Switch Lube Oil	AB	"	"	"	"
PS480C	Pressure Switch Lube Oil	AB	"	"	"	"

COMPONENT LIST

System Decay Heat Removal

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
DH-P1A	Pump Motor	AB	EDS Vol. I DHR Sheet 1	$1.8 \times 10^4 R$	-	Yes
DH-P1B	Pump Motor	AB	" 2	"	-	"
DH-V-1	Drop line Valve Motor Oper.	RB	" 3	Note 7	-	"
DH-V-2	Drop line Valve Motor Oper.	RB	" 4	"	-	"
DH-V-3	Suction Valve Motor Oper.	AB	" 5	$1.8 \times 10^4 R$	-	"
DH-V-4A	Discharge Valve Motor Oper.	AB	" 6	$1.8 \times 10^4 R$	-	yes(Note 3)
DH-V-4B	Discharge Valve Motor Oper.	AB	" 7	$1.8 \times 10^4 R$	-	"
DH-V-5A	BWST Suction Valve Motor Operator	AB	" 8	$1.8 \times 10^4 R$	-	"
DH-V-5B	BWST Suction Valve Motor Operator	AB	" 9	$1.8 \times 10^4 R$	-	"
DH-V-6A	RB Sump Pump Suction Valve Motor Operator	AB	" 10	$1.8 \times 10^4 R$	-	yes
DH-V-6B	RB Sump Pump Suction Valve Motor Operator	AB	" 11	$1.8 \times 10^4 R$	-	"
DH-V-7A	MU System Discharge Valve Motor Operator	AB	" 12	$1.8 \times 10^4 R$	-	"
DH-V-7B	MU System Discharge Valve Motor Operator	AB	" 13	$1.8 \times 10^4 R$	-	"

COMPONENT LISTSystem Reactor Building Isolation

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
LSA/AHV-1A	RB Purge Valve Limit Switch	AB	EDS Vol. I RBIS Sht.1	3.5 x 10 <sup>4</sup> R	Note 2	Yes
LSB/AHV-1A	RB Purge Valve Limit Switch	AB	" 2	"	"	"
SV/AHV-1A1	RB Purge Valve Solenoid Valve	AB	" 3	"	"	"
SV/AHV-1A2	RB Purge Valve Solenoid "	AB	" 4	"	"	"
CA-V-1	Pz Sample Valve Motor Oper.	RB	" 11	Note 7	-	"
LSA/CAV-2	RCS Sample Valve Limit Valve	AB	" 13	3.5 x 10 <sup>4</sup> R	Note 2	"
LSB/CAV-2	RCS Sample Valve Limit Valve	AB	" 14	"	-	"
SV/CAV-2	RCS Sample Valve Solenoid "	AB	" 12	"	-	"
CA-V-3	Pz Water Sample Valve Motor Operator	RB	" 15	Note 7	-	"
CA-V-4A	SG FW Isolation Valve Motor Operator	RB	" 16	"	-	"
CA-V-4B	SG FW Isolation Motor Operator	RB	" 17	"	-	"
CA-V-13	RCS Letdown Sample Valve Motor Operator	RB	" 24	"	-	"
LSA/CAV-189	Demin. Water Isolation Valve Limit Switch	AB	" 25	1.8 x 10 <sup>4</sup> R	Note 2	"
LSB/CAV-189	Demin. Water Isolation Valve Limit Switch	AB	" 26	"	"	"

COMPONENT LISTSystem Reactor Building Isolation

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
SV/CAV-189	Demin. Water Isolation Valve Solenoid Valve	AB	EDS Vol. I RBIS Sht.27	$1.8 \times 10^4 R$	Note 2	"
AH-V-1B	RB Purge Valve Motor Oper.	RB	" 5	Note 7	Note 3	"
AH-V-1C	RB Purge Valve Motor Oper.	RB	" 6	"	"	"
IC-V-2	IC Closed Loop Isolation Valve Motor Operator	RB	EDS Vol. I RBIS Sht.40	"	-	"
20/ICV-3	IC Return Isolation Solenoid Valve	AB	" 41	$1.8 \times 10^4 R$	Note 2	"
33/ICV-3	IC Return Isolation Limit Switch	AB	" 42	"	"	"
LSB/ICV-3	IC Return Isolation Limit Switch	AB	" 43	"	"	"
WDG-V-3	RB Vent header Isolation Valve Motor Operator	RB	" 54	Note 7	-	"
SV/WDG-V4	RB Vent header Isola. Valve Solenoid Valve	AB	" 55	$3.5 \times 10^4 R$	-	"
LSA/WDG-V4	RB Vent header Isola. Valve Limit Switch	AB	" 56	"	Note 2	"
LSB/WDG-V4	RB Vent header Isola. Valve Limit Switch	AB	" 57	"	"	"
WDL-V-303	RCS Drain tank Outlet Isola. Valve Motor Operator	RB	" 58	Note 7	-	"
LSA/WDL-V304	RCS Drain Isolation Valves Limit Switch	AB	" 59	$3.5 \times 10^4 R$	Note 2	"

COMPONENT LISTSystem Reactor Building Isolation

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
LSB/WDL-V304	RC Drain Isolation Valve Limit Switch	AB	EDS Vol. 1 RBIS Sht. 60	$3.5 \times 10^4 R$	Note 2	Yes
SV/WDL-V304	RC Drain Isolation Valve Solenoid Valve	AB	" 61	"	"	"
SV/WDL-V534	RB Sump Outlet Isolation Solenoid Valve	AB	" 64	$1.8 \times 10^4 R$	"	"
LSA/WDL-V534	RB Sump Isolation Limit Switch	AB	" 62	"	"	"
LSB/WDL-V534	RB Sump Isolation Limit Switch	AB	RDS Vol. 1 RBIS Sht. 63	"	"	"
LSA/WDL-V535	RB Sump Isolation Limit Switch	AB	" 65	"	"	"
LSB/WDL-V535	RB Sump Isolation Limit Switch	AB	" 66	"	"	"
SV/WDL-V535	RB Sump Isolation Solenoid Valve	AB	" 67	"	"	"



COMPONENT LIST

System Reactor Protection

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Marsh Env' nment</u>	<u>Remarks</u>	<u>Qualified</u>
RC3A-PT1	RC NR Pressure Transmitter	RB	EDS Vol. 1A RPS Sht.1	Note 7	Note 2	Yes
RC3A-PT2	RC NR Pressure Transmitter	RB	" 2	"	"	"
RC3B-PT1	RC NR Pressure Transmitter	RB	" 3	"	"	"
RC3B-PT2	RC NR Pressure Transmitter	RB	" 4	"	"	"
RC4A-TE2	RC Outlet Temp RTD	RB	" 5	"	-	"
RC4A-TE3	RC Outlet Temp RTD	RB	" 6	"	-	"
RC4B-TE2	RC Outlet Temp RTD	RB	" 7	"	-	"
RC4B-TE3	RC Outlet Temp. RTD	RB	" 8	"	-	"
PS-672	RB Pressure Switch	AB	" 13	3.5 x 10 <sup>4</sup> R	Note 2	"
PS-673	RB Pressure Switch	AB	" 14	"	"	"
PS-674	RB Pressure Switch	AB	" 15	"	"	"
PS-675	RB Pressure Switch	AB	" 16	"	"	"

COMPONENT LISTSystem Engineered Safeguards Actuation

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
PS-283	RB Pressure Switch	AB	EDS Vol. 1A ESAS 2	$3.5 \times 10^4 R$	Note 2	Yes
PS-284	RB Pressure Switch	AB	" 3	"	"	"
PS-286	RB Pressure Switch	AB	" 5	"	"	"
PS-287	RB Pressure Switch	AB	" 6	"	"	"
PS-289	RB Pressure Switch	AB	" 8	"	"	"
PS-290	RB Pressure Switch	AB	" 9	"	"	"
RC3A-PT3	RC WR Pressure Transmitter	RB	" 10	Note 7	"	"
RC3A-PT4	RC WR Pressure Transmitter	RB	" 11	"	"	"
RC3B-PT3	RC WR Pressure Transmitter	RB	" 12	"	"	"
PT-282	RB Pressure Transmitter	AB	" 1	$3.2 \times 10^5 R$	"	"
PT-285	RB Pressure Transmitter	AB	" 4	"	"	"
PT-288	RB Pressure Transmitter	AB	" 7	"	"	"

COMPONENT LIST

System Reactor Building Emergency Cooling

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
AH-E1A	RB Cooler Fan Motor	RB	EDS Vol. 1A RB 1	Note 7	-	Yes
AH-E1B	RB Cooler Fan Motor	RB	2	"	-	"
AH-E1C	RB Cooler Fan Motor	RB	3	"	-	"

COMPONENT LIST

System Core Flood

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
CF-V-2A	CF Sample Isolation Valve Motor Operator	RB	EDS Vol. 1A CF Sht.3	Note 7	-	Yes
CF-V-2B	CF Sample Isolation Valve Motor Operator	RB	" 4	"	-	"
CF-V-3A	CF Vent Valve Motor Operator	RB	" 5	"	-	"
CF-V-3B	CF Vent Valve Motor Operator	RB	" 6	"	-	"
LSA/CFV-19A	CF Makeup Valve Limit Switch	AB	" 7	3.5 x 10 <sup>4</sup> R	Note 2	"
LSB/CFV-19A	CF Makeup Valve Limit Switch	AB	" 8	"	"	"
LSA/CFV-19B	CF Makeup Valve Limit Switch	AB	" 9	"	"	"
LSB/CFV-19B	CF Makeup Valve Limit Switch	AB	" 10	"	"	"
20/CFV-19A	CF Makeup Valve Solenoid Valve	AB	" 11	"	"	"
20/CFV-19B	CF Makeup Valve Solenoid Valve	AB	" 12	"	"	"
LSA/CFV-20A	CF Sample Isolation Limit Switch	AB	" 13	"	"	"
LSB/CFV-20A	CF Sample Isolation Limit Switch	AB	" 14	"	"	"

COMPONENT LISTSystem Core Flood

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
SV/CF-V20A	CF Sample Isolation Solenoid Valve	AB	EDS Vol. 1A CF Sht. 17	$3.5 \times 10^4$ R	Note 2	Yes
LSA/CFV-20B	CF Sample Isolation Limit Switch	AB	" 15	"	"	"
LSB/CFV-20B	CF Sample Isolation Limit Switch	AB	" 16	"	"	"
SV/CF-V20B	CF Sample Isolation Solencid Valve	AB	" 18	"	"	"

COMPONENT LISTSystem Nuclear Services Closed Loop Cooling

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
NS-V-4	RCP Cooler Isolation Valve Motor Operator	AB	FDS Vol. 1A NSCIC Sh.4	3.5 x 10 <sup>4</sup> R	-	Yes
NS-V-15	RCP Cooler Inlet Isolation Valve Motor Operator	AB	" 5	"	-	"
NS-V-32	Non-nuclear Equip.Cooler Isolation Valve Motor Oper.	AB	" 6	"	-	"
NS-V-35	RCP Cooler Isolation Valve Motor Operator	RB.	" 7	Note 7	Materials list not yet received from Limatorque for evaluation for rad- iation affects, how- ever, radiation dose for SB LOCA is not high enough to be of concern.	"



COMPONENT LISTSystem Additional Accident Monitoring Equipment

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
SP1A-LT2	OTSG Level Transmitter	RB	EDS Vol. 1A AAME/RCS Sheet 1	Note 7	Note 4	Yes
SP1B-LT2	OTSG Level Transmitter	RB	" 2	"	"	"
RC1-LT1	PZ-Level Transmitter	RB	" 5	"	-	"
RC1-LT2	PZ Level Transmitter	RB	" 6	"	-	"
RC1-LT3	PZ Level Transmitter	RB	" 7	"	-	"
RC5A-TE1	RC Inlet Temp. RTD	RB	" 8	"	-	"
RC5A-TE2	RC Inlet Temp. RTD	RB	" 9	"	-	"
RC5A-TE3	RC Inlet Temp. RTD	RB	" 10	"	-	"
RC5A-TE4	RC Inlet Temp. RTD	RB	" 11	"	-	"
RC5B-TE1	RC Inlet Temp. RTD	RB	" 12	"	-	"
RC5B-TE2	RC Inlet Temp. RTD	RB	" 13	"	-	"
RC5B-TE3	RC Inlet Temp. RTD	RB	" 14	"	-	"
RC5B-TE4	RC Inlet Temp. RTD	RB	" 15	"	-	"
SP1A-LT4	OTSG Level Transmitter	RB	" 3	"	Note 4	"
SP1B-LT4	OTSG Level Transmitter	RB	" 4	"	"	"

COMPONENT LIST

System Common Equipment

<u>Plant ID No.</u>	<u>Description</u>	<u>Location</u>	<u>Reference to I&amp;E 79-01B Submittal</u>	<u>Harsh Environment</u>	<u>Remarks</u>	<u>Qualified</u>
	Heat Shrink Tubing	RB	EDL Vol. 1A Comm. Sheet 1	Note 7	-	Yes
	Elec. Penetration Assy.	RB	" 3	"	-	"
	Instrument Cable	RB/AB	" 4	"	-	"
	Power & Control Cable	RB/AB	" 5	"		"
	Conax Connectors	RB	" 9	"	Note 5 and 6	"
	Terminal Block	AB	" 2	3.5 x 10 <sup>4</sup> R	Note 2	"