



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

MAY 3 1984

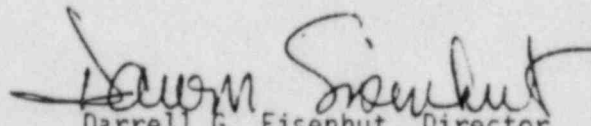
MEMORANDUM FOR: Richard W. Starostecki, Director
Division of Project & Resident Programs
Region I

FROM: Darrell G. Eisenhut, Director
Division of Licensing

There have been a number of recent modifications performed on the Emergency Feedwater system at TMI Unit 1, e.g., strengthening of the EFW safety valve vent stacks, strengthening of the atmospheric dump vent stacks, partial removal of tendon gallery walls, and replacement of EFW flow E/P control converters.

It is appropriate that these modifications be inspected for conformance to design requirements, quality assurance, etc. and that these inspections be considered as restart items.

Please advise me of your plans for completing these inspections prior to restart.


Darrell G. Eisenhut, Director
Division of Licensing

cc: R. Mattson
G. Lainas
L. Rubenstein
F. Rowsome
J. Stolz
J. VanVliet
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B502080134 840713
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WEISS84-339 PDR

cc w/enclosure:

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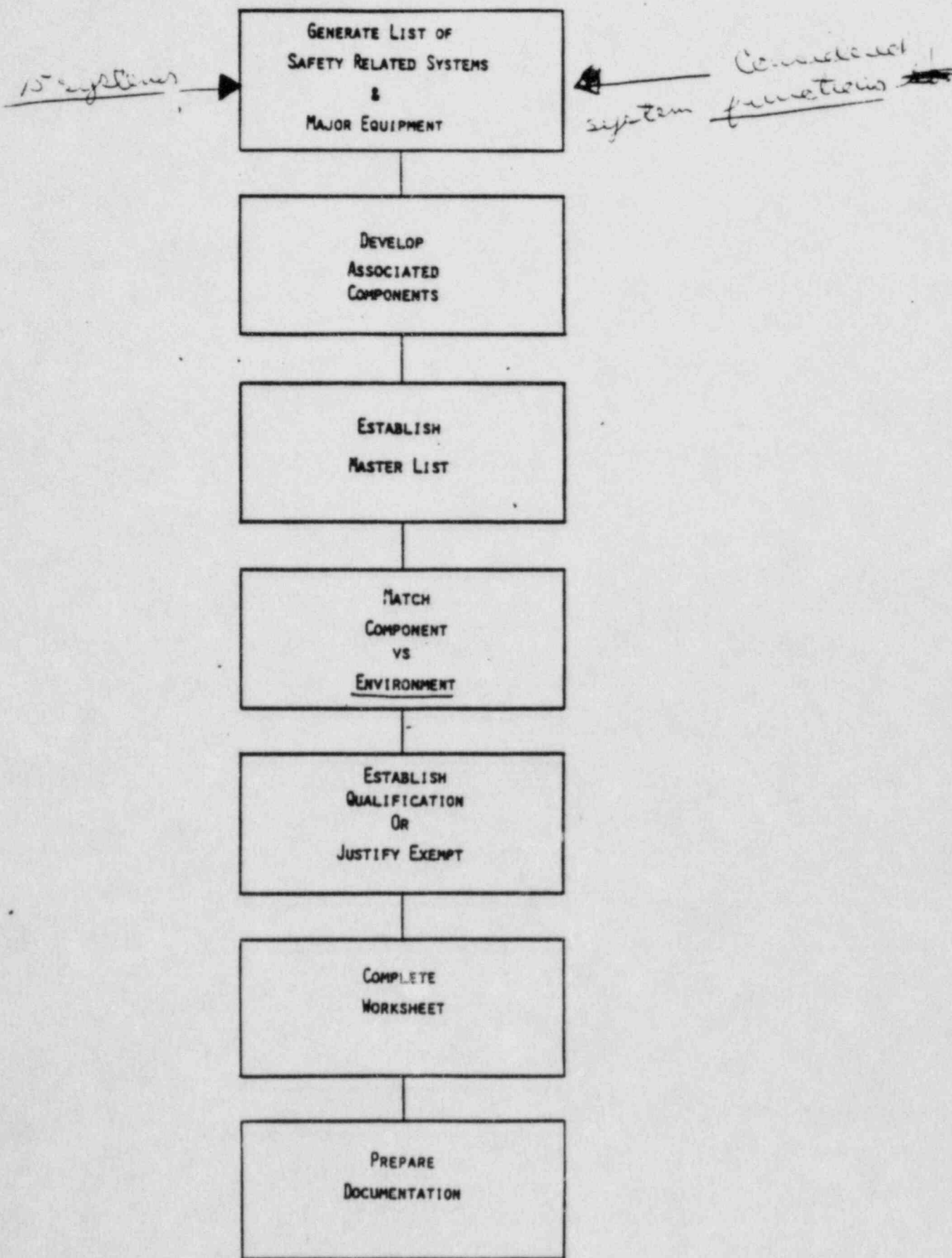
post-accident monitoring
hand instrument

(From the initial list of 30 CANDU design systems)

- MAIN STEAM SYSTEM
- EMERGENCY FEEDWATER/FEEDWATER SYSTEM
- MAKE-UP SYSTEM
- DECAY HEAT REMOVAL SYSTEM
- DECAY HEAT CLOSED LOOP COOLING SYSTEM
- REACTOR BUILDING ISOLATION SYSTEM
- REACTOR BUILDING SPRAY SYSTEM
- REACTOR PROTECTION SYSTEM.
- EMERGENCY SAFEGUARDS ACTUATION SYSTEM
- REACTOR BUILDING EMERGENCY COOLING SYSTEM
- REACTOR BUILDING EMERGENCY COOLING RIVER WATER SYSTEM
- CORE FLOOD SYSTEM
- NUCLEAR SERVICES CLOSED LOOP COOLING SYSTEM
- ADDITIONAL ACCIDENT MONITORING EQUIPMENT*/REACTOR COOLANT SYSTEM

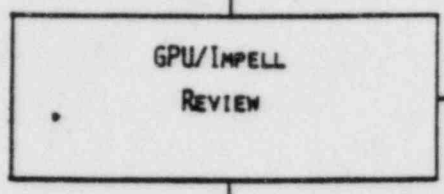
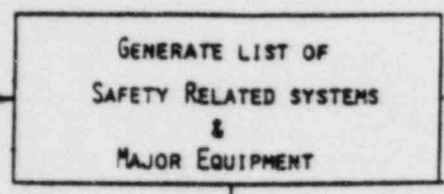
*INSTRUMENT REQUIRED FOR POST ACCIDENT MONITORING

TMI-1 E.G. PROJECT
OVERVIEW FLOW CHART



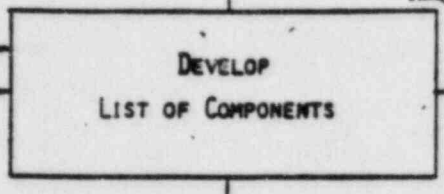
TMI-1 MASTER LIST GENERATION
FLOW CHART

ATOG, SSD, SSLD, SAD,
OP. PROC. FSAR,
RESTART REPORT, P&ID,
LESSON PLAN, TECH. SPECS.,
SYSTEM DESCR.,
IEB 79-01B



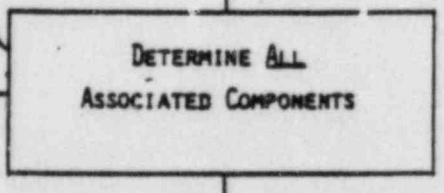
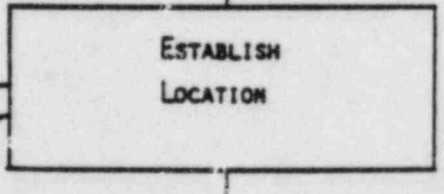
15 SYSTEM FUNCTION
POST HELB/LOCA
IN HARSH ENVIRONMENT
(APPROVED BY NRC
IN SER)

BLOCK DIAGRAMS
ONE-LINE DRGS
PLUS ABOVE



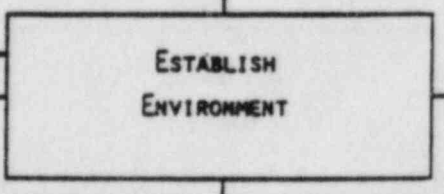
LIST OF COMPONENTS
BY SYSTEM

SUMMARY OF CIRCUITS
GENERAL ARRANGEMENT
CABLE TRAY & CONDUIT
PIPING ARRANGEMENT
VALVE, PUMP & MOTOR
ELEMENTARY DRGS
ELECTRICAL LOCATION
EL33 PROGRAM



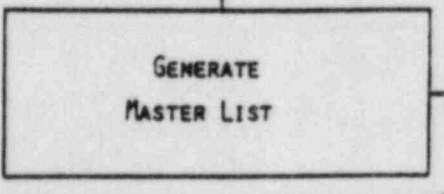
*Decisions
all along
on exempting
components.
(Major ones not
have been
documented)*

FSAR
T/H ANALYSIS
RADIATION ANALYSIS



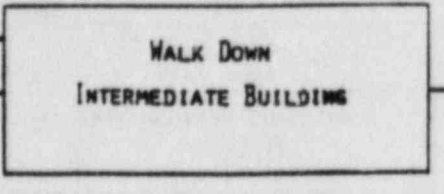
LISTED MOST
CONSERVATIVE
ENVIRONMENT

FEEDBACK LOOP

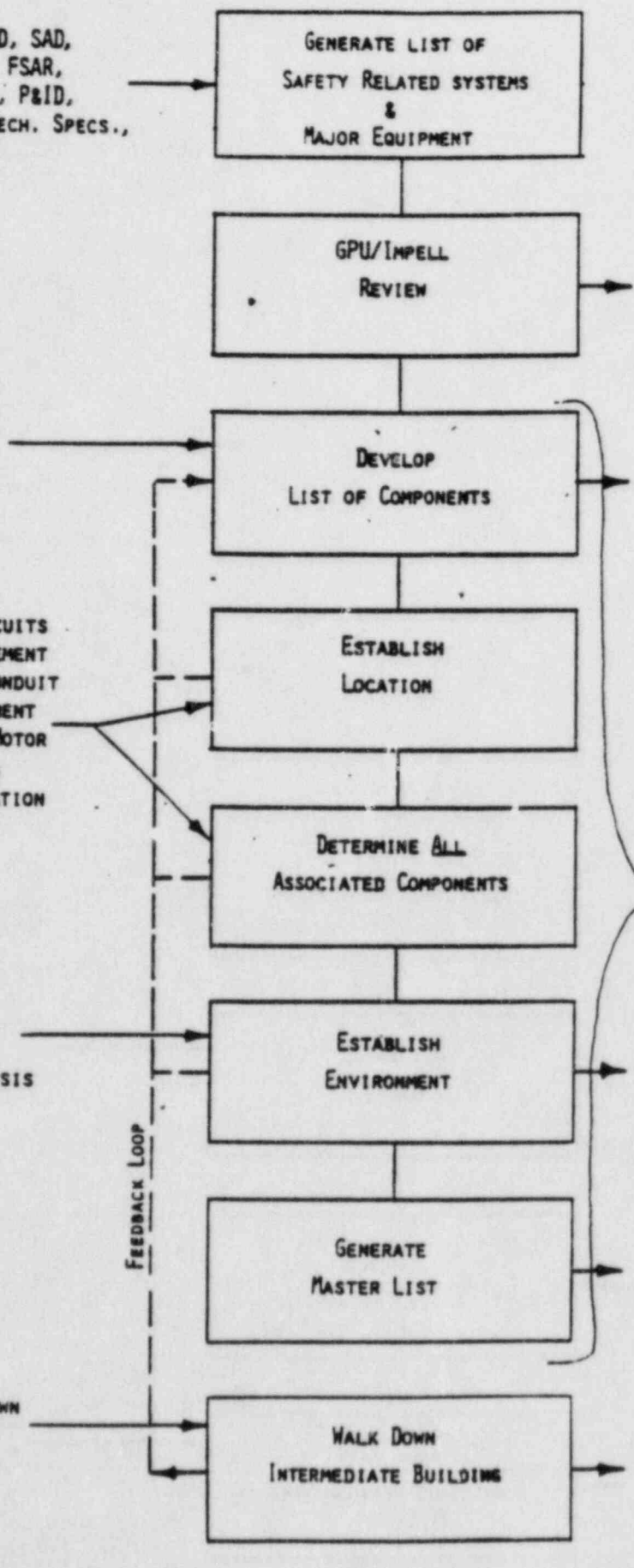


MASTER LIST
REQUIRED BY 79-01B
ENCL 2

PHYSICAL WALKDOWN
ENTIRE I.B.
GPU/INPELL



ESTABLISH EXCELLENT
CORRELATION OF
MASTER LIST
(CORRECTIONS MADE
TO MASTER LIST)



THREE MILE ISLAND UNIT 1 79-01B COMPONENT LIST		SYSTEM <u>EFW/FW</u>
		TABLE OF CONTENTS
COMPONENT	DESCRIPTION	FUNCTION
EF-P-2A	EFW PUMP 'A'	LOFW/MSLS MITIGATION
EF-P-2B	EFW PUMP 'B'	LOFW/MSLS MITIGATION
EF-V-1A	EFW PUMPS SUCTION HDR. ISOLATION VALVE	LOFW/MSLS MITIGATION
EF-V-1B	EFW PUMPS SUCTION HDR. ISOLATION VALVE	LOFW/MSLS MITIGATION
EF-V-2A	EFW PUMPS DISCHARGE HDR. ISOLATION VALVE	LOFW/MSLS MITIGATION
EF-V-2B	EFW PUMPS DISCHARGE HDR. ISOLATION VALVE	LOFW/MSLS MITIGATION
EF-V-8A	EFW PNEUMATIC VALVE	EFW FLOW
EF-V-8B	EFW PNEUMATIC VALVE	EFW FLOW
EF-V-8C	EFW PNEUMATIC VALVE	EFW FLOW LOFW/MSLS
EF-V-30A	EFW FLOW CONTROL TO S.G. 'A'	MITIGATION LOFW/MSLS
EF-V-30B	EFW FLOW CONTROL TO S.G. 'B'	MITIGATION
FI-577	EFW PUMP FLOW / RECIRC. CONTROL	EFW FLOW

MASTER LIST

Three Mile Island
 Unit 1
 Docket No. 50-289
 (Class IE Electrical Equipment Required to
 Function Under Postulated Accident
 Conditions)

Rev. 5
 Date 5/29/81
 Sheet 1 of 3

System: Emergency Feed Water / Feed Water

COMPONENTS

Plant Identification Number	Generic Name	Location	
		Inside Primary Containment	Outside Primary Containment
EF-P2A	Pump Motor		X
EF-P-2B	Pump Motor		X
EF-V-1A	Valve Motor Operator		X
EF-V-1B	Valve Motor Operator		X
EF-V-2A	Valve Motor Operator		X
EF-V-2B	Valve Motor Operator		X
SV182/EF-V-30A	Solenoid Valve		X
SV384/EF-V-30A	Solenoid Valve		X
SV182/EF-V-30B	Solenoid Valve		X
SV384/EF-V-30B	Solenoid Valve		X
T-431	Terminal Box		X
T-432	Terminal Box		X
T-421	Terminal Box		X
T-422	Terminal Box		X
T-419	Terminal Box		X
T-379	Terminal Box		X
	Cable (Power)		X
	Cable (Control)		X

SUMMARY

TMI-1 EQ MASTER LIST DEVELOPMENT

- 0 DETERMINE SYSTEMS REQUIRED TO ACHIEVE SAFE SHUTDOWN FOLLOWING POSTULATED ACCIDENTS (HELB/LOCA)
- 0 DETERMINE COMPONENTS AND ASSOCIATED PERIPHERAL EQUIPMENT WITHIN THE SYSTEMS REQUIRED TO ACHIEVE SAFE SHUTDOWN
- 0 UTILIZED SAFETY SEQUENCE ANALYSIS TO DEVELOP THE BASE LIST OF SYSTEMS AND COMPONENTS
- 0 DETERMINE ALL ASSOCIATED COMPONENTS FOR THE IDENTIFIED SYSTEMS AND EQUIPMENT
- 0 GENERATE MASTER LIST BASED ON FUNCTION AND LOCATION

ADVANTAGES

- 0 DOCUMENTABLE WORK
- 0 BASED UPON ACHIEVEMENT OF DEFINED SAFETY FUNCTIONS
- 0 READILY IDENTIFIES SUPPORT SYSTEMS
- 0 COMPLETELY IDENTIFIES ALL ASSOCIATED COMPONENTS FOR EQ PROGRAM
- 0 CORROBORATE ORIGINAL LIST OF SYSTEMS FROM SSA

Master List
5/7/84

MASTER LIST

Three Mile Island

Unit 1

Docket No. 50-289

(Class IE Electrical Equipment Required to Function Under Postulated Accident Conditions)

Rev. 8

Date 4/27/84

Sheet 1 of 3

System: Emergency Feed Water / Feed Water

COMPONENTS			
Plant Identification Number	Generic Name	Location	
		Inside Primary Containment	Outside Primary Containment
EF-P2A	Pump Motor		X
EF-P-2B	Pump Motor		X
EF-V-1A	Valve Motor Operator		X
EF-V-1B	Valve Motor Operator		X
EF-V-2A	Valve Motor Operator		X
EF-V-2B	Valve Motor Operator		X
5W587/EF V 30A	Solenoid Valve (Deleted From System by SECM-303/LM-13)		
5W584/EF V 30A	Solenoid Valve " " " "		X
5W582/EF V 30B	Solenoid Valve " " " "		X
5W584/EF V 30B	Solenoid Valve " " " "		X
T-452	Terminal Box		X
T-421	Terminal Box		X
T-422	Terminal Box		X
T-419	Terminal Box		X
T-379	Terminal Box		X
	Cable (Power)		X
	Cable (Control)		X

MASTER LIST

Three Mile Island
 Unit 1
 Docket No. 50-289
 (Class IE Electrical Equipment Required to
 Function Under Postulated Accident
 Conditions).

Rev. 8
 Date 4/27/84
 Sheet 2 of 3

System: Emergency Feed Water/Feed water

COMPONENTS			
Plant Identification Number	Generic Name	Location	
		Inside Primary Containment	Outside Primary Containment
FW-V-51	Valve Motor Operator	TRR ITEM 9 CATEGORY III B	X *
FW-V-5B	Valve Motor Operator		X
FW-V-82A	Valve Motor Operator	TRR ITEM 9 CATEGORY III B	X *
FW-V-92B	Valve Motor Operator		v
SV1E1/V-8A	Solenoid Valve	VALVE LOCKED OPEN TRR ITEM 31 CATEGORY III A	X
SV1E1/V-8B	Solenoid Valve	VALVE LOCKED OPEN TRR ITEM 31 CATEGORY III A	X
SV1E1/V-8C	Solenoid Valve	VALVE LOCKED OPEN TRR ITEM 31 CATEGORY III A	X
PI-8-77	Pressure Transmitter	GPUH LTR DATKD 2/4/83	X
PI-8-78	Pressure Transmitter	GPUH LTR DATKD 2/4/83	X
PI-8-79	Pressure Transmitter	GPUH LTR DATKD 2/4/83	v
SV1E2/FW-V-16A	Solenoid Valve	CATEGORY III B TRR ITEM 30	X *
SV1E2/FW-V-16B	Solenoid Valve	CATEGORY III B TRR ITEM 25	X *
SV1E2/FW-V-16B	Solenoid Valve		X
SV1E4/FW-V-16B	Solenoid Valve		X
SV1E3/FW-V-17A	Solenoid Valve	CATEGORY III B TRR ITEM 30	X *
SV1E3/FW-V-17A	Solenoid Valve	CATEGORY III B TRR ITEM 25	X *
SV1E3/FW-V-17B	Solenoid Valve		X
SV2E1/FW-V-17B	Solenoid Valve		X

MASTER LIST

Three Mile Island
 Unit 1
 Docket No. 50-289
 (Class IE Electrical Equipment Required to
 Function Under Postulated Accident
 Conditions)

Rev. 8
 Date 4/27/89
 Sheet 1 of 1

System: Emergency Feed Water/ Feed Water

COMPONENTS			
Plant Identification Number	Generic Name	Location	
		Inside Primary Containment	Outside Primary Containment
T 620	Terminal Box		X
T 621	Terminal Box		X
T 622	Terminal Box		X
FE-777	Flow Transducer		X (NOTE)
FE-780	Flow Transducer		X (NOTE)
FE-786	Flow Transducer		X (NOTE)
FE-789	Flow Transducer		X (NOTE)
1A ES VLV CC	Valve Control Center	<i>CATEGORY III B TGR ITEM 117</i>	X *
1B ES VLV CC	Valve Control Center	↓	X *
1C ES VLV CC	Valve Control Center	↓	X *
SP-V-5A (EF-30A)	I/P Converter		X
SP-V-5B (EF-30B)	I/P Converter		X
	SEMI CONDUCTOR DIODE		X
	Cable "Instrumentation"		X

Note: Component not installed, qualification work sheet to be submitted with lesson learned report.

* NON-HARSH ENVIRONMENT

MASTER LIST

Three Mile Island
 Unit 1
 Docket No. 50-289
 (Class IE Electrical Equipment Required to
 Function Under Postulated Accident
 Conditions)

Rev. 8
 Date 4/27/84
 Sheet 1 of 1

System: Common Items

COMPONENTS			
Manufacture	Generic Name	Location	
		Inside Primary Containment	Outside Primary Containment
Raychem	Heat Shrink Tubing	1	1
States # NT	Terminal Block		1
GE # F01	Electrical Penetration	1	
Anaconda	Instrument Cable (CC-2193)	1	1
Kerite	Power & Control Cable	1	1
Conax PL-14-B2	Press Seal Modules	1	1
Conax 1000	Press Seal Modules	1	1
Stanwick G-12	Terminal Block		1
General Semiconductor	SemiConductor Diode		1
GE # CR-151	Terminal Block		1
GE # EB-25	Terminal Block		1
Anaconda	Instrument Cable (FREP)		1
Boston Insul.Wire	Instrument Cable		1

EFW ELECTRICAL EQUIPMENT LOCATED IN A

HARSH ENVIRONMENT NOT REQUIRING ENVIRONMENTAL QUALIFICATION

<u>Identification Number</u>	<u>Generic Name</u>	<u>Reason For Not Requiring Qualification</u>
LSA/MS-V6	Limit Switch	Associated with the non-qualified turbine driven EFP system
LSB/MS-V6	Limit Switch	
LSA/MS-V13A	Limit Switch	
LSA/MS-V13B	Limit Switch	
LSB/MS-V13A	Limit Switch	
LSB/MS-V13B	Limit Switch	
LS/EF-V30A	Limit Switch	No longer electrically connected
LS/EF-V30B	Limit Switch	
SV/EF-V8A	Solenoid Valve	No longer electrically connected and mechanically locked open
SV/EF-V8B	Solenoid Valve	
SV/EF-V8C	Solenoid Valve	
EF-V4	Motor Operator	Emergency connection to river water
EF-V5	Motor Operator	
FI-S77	Flow Switch	Switches are electrically disconnected
FI-S78	Flow Switch	
FI-S79	Flow Switch	
PT-65	Dis Press. Xmtr	EFW flow is indicated by qualified flow instrumentation rather than pump pressure
PT-71	Dis Press Xmtr	
PT-75	Dis Press. Xmtr	
TE-330	Cooling Water Temp.	Associated with the non-qualified turbine driven EFP system
EF-V-15A	Cooling Water Ctl.	
EF-V-15B	Cooling Water Ctl.	
SIT-8	Turbine Speed Ind.	