Harry Tauber
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January 16, 1984
EF2 - 66,759

Director of Nuclear Reactor Regulation
Attention: Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Youngblood:

Reference: Enrico Fermi Atomic Power Plant, Unit 2
NRC Docket No. 50-341

Subject: Additional Environmental Qualification Information Requested by the NRC

This letter provides additional information requested by the NRC staff during the NRC/DECo meeting concerning the Fermi-2 EQ submittal on Harsh Environment Safety-Related Electrical Equipment, held on October 19, 1983 in Bethesda, Maryland. The items provided are as follows: (1) the Edison evaluation of all FSAR, Chapter 15, Design Basis Events in the development of the Fermi-2 Harsh Environment parameters (attachment 1), (2) a list of Regulatory Guide 1.97, Rev. 2, Category 1 and 2 equipment and its qualification status (attachment 2), (3) a list of equipment associated with each applicable category of NUREG-0737, contained in the Fermi-2 NUREG-0588, July 1983 submittal and its qualification status (attachment 3) and (4) clarification of component reclassification criterion No. 1 (attachment 4).

Attachment 1 is submitted to supplement the Detroit Edison response to 10CFR50.49, previously transmitted via EF2-65,629 dated November 1, 1983. This supplement addresses the evaluation of all FSAR, Chapter 15 design basis events and their potential impact on the Environmental Qualification requirements of safety-related electrical equipment which may be subjected to a harsh environment, as required by 10CFR50.49 (b) (1).

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Attachments 2, 3, and 4 are submitted for additional information and/or clarification as requested by the NRC in the above mentioned meeting.

Should you require any further information or clarification, please contact Mr. O. K. Earle (313) 586-4211.

Sincerely,

Harry Tauber

cc: Mr. P. M. Byron
Mr. M. D. Lynch
Mr. A. S. Masciantonio

ATTACHMENT 1

FSAR CHAPTER 15 EVENT HARSH ENVIRONMENT EVALUATION

In July of 1983, Detroit Edison resubmitted its harsh environment safety related electrical equipment qualification program for NRC review. This program was based on the requirements of NUREG-0588 which addressed electrical equipment exposed to harsh environments resulting from high energy line breaks (HELB) and/or loss of coolant accidents (LOCA). In order to completely address the requirements of subsection 10CFR50.49 (b) (1), this attachment addresses the remaining design basis events discussed in Chapter 15 and in Appendix 15B of the Enrico Fermi Unit 2 FSAR.

FSAR Section	Harsh Environment Evaluation
15.1.1 - 15.1.3, 15.1.6 - 15.1.11, 15.1.15, 15.1.26-15.1.29, 15.1.31-15.1.36 & 15B.1.1-15B.1.4, 15B.2.1-15B.2.7, 15B.3.1, 15B.3.2, 15B.4.1-15B.4.7, 15B.5.1	There are no pipe ruptures and no fuel failures resulting from these events. For some of these events, radioactivity is discharged to the suppression pool due to operation of HPCI or RCIC systems or actuation of the SRV's; however, operation of this equipment is anticipated and does not cause a harsh environment.
15.1.4, 15.1.16, 15.1.18, 15.1.20	These events are not applicable to Fermi-2.
15.1.25, 15.1.30	These events are not postulated except in conjunction with other design basis events such as LOCA. Their affects on the environment are included in the evaluation of the applicable bounding design basis events.
15.1.5 & 15B.3.3	These events, including the limiting fault of recirculation pump seizure, does not result in any fuel failure or pipe ruptures. Therefore, it is concluded that no harsh environment would be created.
15.1.12	Event 15.1.12.1, Internal Events, are events which develop from fires in the plant. The local effects of postulated fires have been evaluated and are addressed in FSAR Chapter 9. This evaluation demonstrates that in no case would a fire affect either the shutdown capability or the safety or integrity of the primary or secondary containment. Furthermore, no essential equipment is exposed to a harsh environment due to incidental effects (such as release of radioactivity from a charcoal bed) of these postulated fires.

FSAR CHAPTER 15 EVENT HARSH ENVIRONMENT EVALUATION

FSAR Section	Harsh Environment Evaluation
15.1.12 (Cont.)	Event 15.1.12.2. External Events, are not included in the scope of 10CFR50.49. (Reference 10CFR50.49 (c)(ii)).
15.1.13, 15.1.14 & 15B.6.4 - 15B.6.6	These events, Pipe Break Inside Primary Containment and Pipe Break Outside Containment, form the basis for the environmental envelopes and equipment classifications used in our qualification program.
15.1.17, 15.1.19 & 15B.7.1	These events, Failure of Air Ejector Lines and Failure of Gaseous Radwaste System may cause a harsh environment in certain areas of the turbine building. However, there is no safety related equipment in these areas which must function to mitigate these events or safely shutdown the reactor.
15.1.21 & 15B.4.9	This event, Control Rod Drop, may cause a harsh environment in the steam tunnel and the turbine building. There is no equipment in the turbine building which must function to mitigate this event or safely shutdown the reactor. All equipment located in the steam tunnel which is required to mitigate this accident or shutdown the reactor is being qualified to a more severe profile for LOCA. Note that even though operation of the main steam line radiation monitors (2D1106N006 A-F) is assumed to initiate main steam line isolation, failure of these monitors to isolate the main steam lines would not result in offsite doses greater than a small fraction of that specified in 10CFR100. Therefore, these monitors are classified 2C (NUREG-0588, Appendix E). Refer to Volume 3 of our July, 1983 submittal.
15.1.22 & 15B.6.2	In accordance with Regulatory Guide 1.11, instrument lines which penetrate primary containment and are part of the reactor coolant pressure boundary are equipped with flow restricting orifices inside the drywell and excess flow check valves outside the drywell. The environmental conditions due to instrument line breaks inside the drywell are bounded by the LOCA profile. For the secondary containment, although instrument line breaks between the drywell wall and the excess flow check valves were analyzed in

FSAR CHAPTER 15 EVENT HARSH ENVIRONMENT EVALUATION

FSAR Section	Harsh Environment Evaluation
15.1.22 & 15B.6.2 (Cont.)	Chapter 15 to demonstrate acceptable offsite dose consequences, this analysis is strictly for radiological purposes. For instrument line breaks outside the drywell, excess flow check valves are used, in compliance with the General Design Criteria and Regulatory Guide 1.11. The excess flow check valves would automatically isolate all instrument line breaks which are in excess of approximately 2 gpm. Indication of check valve closure is provided in the control room. These breaks therefore would not create a harsh environment.
15.1.23 & 15B.7.4	This event, Fuel Handling Accident, could release radioactivity to the reactor building and may expose equipment to a harsh environment. Since the reactor is at cold shutdown for this event, core cooling can be performed by the RHR system. This system is also required to operate and is being qualified for LOCA, which results in a more severe environment than the fuel handling accident. Note that even though operation of the fuel pool exhaust radiation monitors (2D1106N010 A-D) is assumed to initiate secondary containment isolation and SGTS, failure of these monitors would not result in offsite doses greater than a small fraction of the limits of 10CFR100. Therefore, these monitors are classified 2C (NUREG-0588, Appendix E). Refer to Volume 3 of our July, 1983 submittal.
15.1.24 & 15B.7.3	No equipment required to safely shutdown the reactor is exposed to a harsh environment as a result of accidents in the radwaste building. No credit is taken for any equipment to mitigate this event.
15.1.37 & 15B.8	This event, Anticipated Transient Without Scram, is not postulated to result in failed fuel or pipe rupture. Therefore, it was determined that this event would not cause a harsh environment.

ATTACHMENT 2

List of Reg. Guide 1.97 Cat. 1 and 2 Instruments

Reg. Guide 1.97 Ref.	Parameter	Instrument Numbers (PIS NO.)	Manufacturers or Model Number	NUREG-0588 Submittal Qual. Status (See Notes on Sht. 10)
A1	Suppression Pool	T50-N406 A&B (sensor)	Rosemount 1152GP5N22PB	Harsh, 2A, Qualified
C7	Water Level	T50-R804 A&B (recorder)	L&N 831-13-09-0999-6-B0	Mild Environment
D5		T50-K800 A&B (pwr. supply)	GE PPD #184C4571	Mild Environment
(Cat 1)				
A2	Suppression Chamber	T50-N404 A & 5B (sensor)	Dual Type T Thermocouple	Harsh, 2A, Qualified
D5	Water Temp	T50-R800 A&B (recorder)	L&N Speedomax 'W" Mark III	Mild Environment
(Cat 2)				
A3	Drywell Pressure	T50-N415 A&B (sensor)	Rosemount 1152GP7N22PB	Harsh, 2A, Qualified
B7	Wide Range	T50-R802 A&B (recorder)	L&N 833-13-13-13-00-00-09	Mild Environment
B9		T50-K800 A&B (pwr. supply)	GE PPD #184C4571	Mild Environment
C8				
C10				
(Cat 1)				
A4	Drywell Oxygen	T50N005 A&B (sensor)	Delphi B6G-1B6-C	Harsh, 2A, JIO
C12	Concentration	H21P282 (analyzer)	Delphi K-IV (panel)	Harsh, 2A, JIO
(Cat 1)		H21P283 (analyzer)	Delphi K-IV (panel)	Harsh, 2A, JIO
		T50K005 A&B (conditioner)	Delphi 4300-189	Harsh, 2A, JIO
		T50R806 A&B (recorder)	L&N Speedomax Mark III 'M'	Mild Environment
A5	Drywell Hydrogen	T50N004 A&B (sensor)	Delphi B5G-1B6-C	Harsh, 2A, JIO
C11	Concentration	H21P282 (analyzer)	Delphi K-IV (panel)	Harsh, 2A, JIO
(Cat 1)		H21P283 (analyzer)	Delphi K-IV (panel)	Harsh, 2A, JIO
		T50K004 A&B (conditioner)	Delphi 4300-189	Harsh, 2A, JIO
		T50R806 A&B (recorder)	L&N Speedomax Mark III 'M'	Mild Environment

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B1 (Cat 1)	Neutron Flux	C51-N002A-H (IRM det)	GE112C3144G008	Harsh, 2C, Reclassified
		C51-K002A-H (IRM preamp)	GE112C2218G1	Harsh, 2C, Reclassified
		C51-K601 A-H (IRM Ind)	GE	Mild Environment
		C51-R607A-D (IRM Record)	L&N Speedomax 'M' Mark III	Mild Environment
		C51-K605 (NMS)	GE248A9730WH	Mild Environment
		B11-D193001-43 (LPRM Sensor)	GE163C1154G002	Harsh, 2C, Reclassified
		C51-R603A-D (Recorder)	L&N Speedomax 'M' Mark III	Mild Environment
B4 (Cat 1)	Reactor Water Level	B21-N085 A&B (sensor)	Rosemount 1153DB5PA	Harsh, 2A, Qualified
		B21-N685 A&B (amplifier)	Rosemount 510DU	Mild Environment
		B21-K609 A-D (pwr. supply)	GE9T66Y990	Mild Environment
		B21-R610 (indicator)	Model 1316 1-5VDC	Mild Environment
		B21-R615 (recorder)	L&N Speedomax Type "M"	Mild Environment
		B21-N091 A&B (sensor)	Rosemount 1153DB5PA	Harsh, 2A, Qualified
		B21-N691 A&B (amplifier)	Rosemount 510DU	Mild Environment
		B21-K610 A-D (pwr. supply)	GE 9T66Y990	Mild Environment
		B21-R623 A&B (recorder)	L&N Speedomax Type "M"	Mild Environment
B5 C3	BWR Core Thermocouples	None	None	N/A
B6 C4 C9 (Cat 1)	(Steam Dome) Reactor Pressure	B21-N051 A&B (sensor)	General Electric (556)	Harsh, 2C, Reclassified
		B21-R623 A&B (recorder)	L&N Speedomax M Mark III	Mild Environment
		B21-K613 A&B (power supply)	GE Model 570-06	Mild Environment
B8 C6 (Cat 1)	Drywell Sump Level	G11-N609 (sensor)	Gould PD3018	Harsh, 2C
		G11-RX01 (recorder)	Tracor Westronics S4N	Mild Environment

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List of Reg. Guide 1.97 Cat. 1 and 2 Instruments

Reg. Guide 1.97 Ref.	Parameter	Instrument Numbers (PIS NO.)	Manufacturers or Model Number	NUREG-0588 Submittal Qual. Status (See Notes on Sht. 10)
B10 (Cat 1)	Primary Containment Isolation Valve Position	(See Table 1) (sensors) Various status lamps	(See Table 1)	(See Table 1) Mild Environment
C1 (Cat 1)	Radioactivity Concentration or Rad level in circulating primary coolant	None	N/A	This measurement is obtained by a grab sample analysis approach. A sample of coolant can be directly obtained and analyzed using the post accident sampling system.
C5 E1 (Cat 1)	Primary Containment Area Radiation	D11-N443 A&B (sensor) D11-K817 A&B (conditioner) D11-K917 A&B (Pwr. supply) D11-R806 (recorder) D11-R810 (recorder)	GAC: RD-23 GAC: RP-2C GAC: RP-23 L&N Speedomax "W" 2 pen L&N Speedomax "W" 2 pen	Harsh, 2A, Qualified Mild Environment Mild Environment Mild Environment Mild Environment
C14 E3 (Cat 2)	Radiation Exposure Rate (inside bldgs. or areas, fuel handling building, secondary containment, which are in direct contact with primary containment where penetrations and hatches are located).	D21-R600 (recorder) D21-R601 (recorder) D21-R602 (recorder) D21-R603 (recorder) Misc. sensors	L&N Speedomax 'W' 12-point L&N Speedomax 'W' 12-point L&N Speedomax 'W' 12-point L&N Speedomax 'W' 12-point	Mild Environment Mild Environment Mild Environment Mild Environment Harsh, Non-1E, 2C

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C15 (Cat 2)	Effluent Radio-activity-Noble gases (from bldgs. as indicated above)	Radwaste Building Vent		
		D11-N503 A-G (sensor)	Eberline elements	Mild Environment
		D11-K553 (conditioner)	Eberline Sping-3	Mild Environment
		D11-K403 (isolator)	Eberline CLI-1	Mild Environment
		Turbine Bldg. Vent		
		D11-N504A-G (sensor)	Eberline elements	Mild Environment
		D11-K554 (conditioner)	Eberline Sping 3	Mild Environment
		D11-K404 (isolator)	Eberline CLI-1	Mild Environment
		Service Bldg. Vent		
		D11-N505A-G (sensor)	Eberline elements	Mild Environment
		D11-K555 (conditioner)	Eberline Sping-3	Mild Environment
		D11-K405 (isolator)	Eberline CLI-1	Mild Environment
		SGTS Exhaust		
		D11-N510 A&B (sensor)	Eberline RDS-1	Mild Environment
		D11-N511 A&B (sensor)	Eberline RDS-3A	Mild Environment
		D11-N512 A&B (sensor)	Eberline RDA-2A	Mild Environment
		D11-N513 A&B (sensor)	Eberline RDA-3A	Mild Environment
		D11-N514 A&B (sensor)	Eberline GM Tube	Mild Environment
		D11-N515 A&B (sensor)	Eberline GM Tube	Mild Environment
		D11-N516 A&B (element)	Eberline DA1-1CC	Mild Environment
		D11-K556 A&B (conditioner)	Eberline Sping-3	Mild Environment
		D11-K406 A&B (isolator)	Eberline CLI-1	Mild Environment
		Accident Range SGT Exhaust		
		D11-K400 A&B (monitor)	Eberline DAM-4	Mild Environment
		D11-N520 A&B (sensor)	Eberline GM Tube	Mild Environment
		D11-N521 A&B (sensor)	Eberline GM Tube	Mild Environment
		D11-N522 A&B (sensor)	Eberline GM Tube	Mild Environment
		D11-K523 A&B (sensor)	Eberline GM Tube	Mild Environment
		D11-K416 A&B (isolator)	Eberline CLI-1	Mild Environment

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Reg. Guide 1.97 Ref.	Parameter	Instrument Numbers (PIS NO.)	Manufacturers or Model Number	NUREG-0588 Submittal Qual. Status (See Notes on Sht. 10)
		Reactor Building Exhaust		
C15 (Cont.)	Effluent Radioactivity-Noble gases (from bldgs. as indicated above)	D11-N507A-H (sensor)	Eberline	Mild Environment
		D11-K557 (conditioner)	Eberline Sping-4	Mild Environment
		D11-K407 (isolator)	Eberline CLI-1	Mild Environment
		Onsite Storage Bldg. Exhaust		
		D11-N508 A-F (sensor)	Eberline	Mild Environment
		D11-K558 (conditioner)	Eberline Sping-3	Mild Environment
		D11-K408 (isolator)	Eberline CLI-1	Mild Environment
		D11-K610 (terminal/printer)	Eberline CT-2	Mild Environment

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Reg. Guide 1.97 Ref.	Parameter	Instrument Numbers (PIS NO.)	Manufacturers or Model Number	NUREG-0588 Submittal Qual. Status (See Notes on Sht. 10)
D3 (Cat 2)	Suppression Chamber Spray Flow (RHR Flow)	E11-N015 A&B (sensor)	GEMAC-555	Harsh, 2A, J10
		E11-K600 A&B (Sq rt. conv)	GEMAC-565	Mild Environment
		E11-K603 A&B (pwr. supply)	GEMAC-570	Mild Environment
		E11-R603 A&B (indicator)	HAYS-REP 360	Mild Environment
		E11-R608 A&B (recorder)	L&N Speedomax-M 1 pen	Mild Environment
D4 (Cat 2)	Drywell Pressure Narrow Range	T50-N401 A&B (sensor)	Rosemount 1152GP5N22PB	Harsh, 2C, Reclassified
		T50-K800 A&B (pwr. supply)	GEPPD #184C4571	Mild Environment
		T50-R802 A&B (recorder)	L&N #833-13-13-13-00-00	Mild Environment
D7 (Cat 2)	Drywell Atmosphere Temperature	T50-N409 B & 12A (sensor)	Dual Type T Thermocouple	Harsh, 2A, Qualified
		T50-K805 & K808 (cond)	Validyne TC-292	Mild Environment
		T50-R800 A&B (recorder)	L&N Speedomax 'W' Mark III	Mild Environment
D8 (Cat 2)	Drywell Spray Flow (RHR Flow)	E11-N015 A&B (sensor)	GEMAC-555	Harsh, 2A, Qualified
		E11-K600 A&B (sq rt. conv)	GEMAC-565	Mild Environment
		E11-K603 A&B (pwer. suppy)	GEMAC-570	Mild Environment
		E11-R603 A&B (indicator)	HAYS-REP 360	Mild Environment
		E11-R608 A&B (recorder)	L&N Speedomax-M 1-pen	
D9 (Cat 2)	Main Steam line Isolation Valves Leakage Control System Pressure	B21-N484 & N487 (sensor)	Rosemount 1153D85	Harsh, 2A, Qualified
		B21-K815 & K827 (converter)	Foxboro N2AI-I3V	Mild Environment
		B21-K845 & K847 (converter)	Foxboro N2AO-VAI	Mild Environment
		B21-R807 & R808 (indicator)	Hays Rep 3600 V-5A	Mild Environment
D10 (Cat 2)	Primary Systems Safety Relief Valve Positions	B21-N410 A-H (sensor)	GE/PCI A17-1P (N)	Harsh, 2A, Qualified
		B21-N410 J-N (sensor)	GE/PCI A17-1P (N)	Harsh, 2A, Qualified
		B21-N410 P&R (sensor)	GE/PCI A17-1P (N)	Harsh, 2A, Qualified
		H21-P090-1-2 (relays)	GE Assembly	Mild Environment
		Status Lamps, Control Room		Mild Environment
D11 (Cat 2)	Isolation Condenser System Shell-Side Water Level	We do not have an isolation condenser		N/A
		-		
		-		
		-		
D12 (Cat 2)	Isolation Condenser System Valve Position	-		N/A
		-		

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D20 (Cat 2)	RHR Heat Exchanger Outlet Temp. (E11-N027A&B: pump & heat exc. outlet)	E11-N027 A&B (sensor) E11-K608 A&B (converter) E11-R601 A&B (recorder)	Therm. Type T Transm. 610T-65 L&N Speedomax-M Mark III	Harsh, Non 1E, 2C Mild Environment Mild Environment
D21 (Cat 2)	Cooling Water temp. to ESF System Components (E11-N005 A&B: RHR service water temp)	E11-N005 A&B (sensor) E11-K609 A&B (converter) E11-R601 A&B (recorder)	Therm. Type T Transm. 610T-65 L&N Speedomax-M Mark III	Harsh, Non 1E, 2C Mild Environment Mild Environment
D22 (Cat 2)	Cooling Water Flow to ESF System Components	P44-C001A-1B151 (ammeter) P44-C001B-2B87 (ammeter)	Int. Instruments 1139E Int. Instruments 1139E	Mild Environment Mild Environment
D24 (Cat 2)	Emergency Damper Position (Control Room inlet, reactor building exhaust)	T41-N037A, 38A T41-N039B, 40B T41-N041A, 42A T41-N043B, 44B T41-N073 T41-N074	NAMCO EA080-11100 NAMCO EA080-11100 NAMCO EA080-11100 NAMCO EA080-11100 NAMCO EA510-17702 NAMCO EA510-17702	Mild Environment Mild Environment Mild Environment Mild Environment Mild Environment Mild Environment
D25 (Cat 2)	Status of Standby power & other sources important to safety	Emergency Diesel Gen. (sensors) DC System (sensors) Miscellaneous indication in the main control room		Mild Environment Mild Environment Mild Environment

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D13 (Cat 2)	RCIC Flow	E51-N003 (sensor)	GEMAC 555	Harsh, 2C
		E51-K600 (pwr. supply)	GEMAC 570-06	Mild Environment
		E51-K601 (sq.rt.extract)	FEMAC 565	Mild Environment
		E51-R613 (indicator)	HAYS-REP 3600-507	Mild Environment
D14 (Cat 2)	HPCI Flow	E41-N008 (sensor)	GEMAC 555	Harsh, 2A, JIO
		E41-K600 (pwr. supply)	GEMAC 570-06	Mild Environment
		E41-K601 (sq.rt.extract)	GEMAC 50-565	Mild Environment
		E41-R613 (indicator)	HAYS-REP. 3600-507	Mild Environment
D15 (Cat 2)	Core Spary System Flow	E21-N003 A&B (sensor)	GEMAC 555	Harsh, 2A, JIO
		E21-K600 A&B (pwr. supply)	GEMAC 570-06	Mild Environment
		E21-R601 A&B (indicator)	HAYS-REP 3600	Mild Environment
D16 (Cat 2)	LPCI System Flow (RHR System Flow)	E11-N015 A&B (sensor)	GEMAC 555	Harsh, 2A, JIO
		E11-K600 A&B (sq.rt.conv.)	GEMAC-565	Mild Environment
		E11-K603 A&B (pwr. supply)	GEMAC-570	Mild Environment
		E11-R603 A&B (indicator)	HAYS-REP 3600	Mild Environment
		E11-R608 A&B (recorder)	L&N SPEEDOMAX-M 1-PEN	Mild Environment
D17 (Cat 2)	SLCS Flow	None	N/A	N/A Positive DISP pump
D18 (Cat 2)	SLCS Storage Tank Level	C41-N001 (sensor)	GEMAC 555	Harsh, Non-1E, 2C
		C41-K600 (pwr. supply)	GEMAC 570-06	Mild Environment
		C41-R601 (indicator)	WESTON 1316	Mild Environment
D19 (Cat 2)	RHR System Flow	E11-N015 A&B (sensor)	GEMAC-555	Harsh, 2A, JIO
		E11-K600 A&B (sq.rt.conv.)	GEMAC-565	Mild Environment
		E11-K603 A&B (pwr. supply)	GEMAC-570	Mild Environment
		E11-R603 A&B (indicator)	HAYPS-REP 3600	Mild Environment
		E11-R608 A&B (recorder)	L&N Speedomax-M 1-PEN	Mild Environment

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Reg. Guide 1.97 Ref.	Parameter	Instrument Numbers (PIS NO.)	Manufacturers or Model Number	NUREG-0588 Submittal Qual. Status (See Notes on Sht. 10)
E2	Reactor Building	D11-N010 A-D (element)	GE 194X927G11	Harsh, 2C, Reclassified
E6	or secondary	D11-K609 A-D (monitor)	GE 129B2803G11	Mild Environment
(Cat 2)	containment area	D11-R605 (recorder)	L&N Speedomax M 2 pen	Mild Environment
	radiation	D11-R606 (recorder)	L&N Speedomax M 2 pen	Mild Environment
E4	Drywell Purge,	D11-N510 A&B (sensor)	Eberline RDS-1	Mild Environment
(Cat 2)	standby gas	D11-N511 A&B (sensor)	Eberline RDA-3A	Mild Environment
	treatment system	D11-N512 A&B (sensor)	Eberline RDA-2A	Mild Environment
	purge	D11-N513 A&B (sensor)	Eberline RDA-3A	Mild Environment
		D11-N514 A&B (sensor)	Eberline GM Tube	Mild Environment
		D11-N515 A&B (sensor)	Eberline GM Tube	Mild Environment
		D11-N516 A&B (element)	Eberline DA1-1CC	Mild Environment
		D11-N556 A&B (conditioner)	Eberline Sping-3	Mild Environment
		D11-K406 A&B (isolator)	Eberline CLI-1	Mild Environment
		D11-K400 (monitor)	Eberline DAM-4	Mild Environment
		D11-N520 A&B (sensor)	Eberline GM Tube	Mild Environment
		D11-N521 A&B (sensor)	Eberline GM Tube	Mild Environment
		D11-N522 A&B (sensor)	Eberline GM Tube	Mild Environment
		D11-N523 A&B (sensor)	Eberline GM Tube	Mild Environment
		D11-K416 A&B (isolator)	Eberline CLI-1	Mild Environment
		D11-K610 (terminal/printer)	Eberline CT-2	Mild Environment
E5 (Cat 2)	Secondary containment purge	Same as E4		
E7 (Cat 2)	Aux. bldg. (incl. any bldg. containing primary system gases, e.g. waste gas decay tank)	Same as C15		

ATTACHMENT 2

List of Reg. Guide 1.97 Cat. 1 and 2 Instruments

Reg. Guide 1.97 Ref.	Parameter	Instrument Numbers (PIS NO.)	Manufacturers or Model Number	NUREG-0588 Submittal Qual. Status (See Notes on Sht. 10)
E8 (Cat 2)	Common Plant Vent or multi-purpose vent discharging any of the above	D11-N507A-H (sensor)	Eberline	Mild Environment
		D11-K557 (conditioner)	Eberline Sping-4	Mild Environment
		D11-K407 (isolator)	Eberline CLI-1	Mild Environment
		D11-K610 (terminal/printer)	Eberline CT-2	Mild Environment
E2 (Cat 2)	All other identified release points	See C15		

NUREG-0588 Submittal Qualification Status Notes

Harsh, 2A, Qualified - Located in a potentially harsh, accident-generated environment, NUREG-0588, App. E Category 2A. Device is qualified and listed in the EF2 July, '83 NUREG-0588 submittal, Volume 2.

Harsh, 2A, JIO - Located in a potentially harsh, accident-generated environment; NUREG-0588 Appendix E Category 2A; further qualification needed. A Justification for Interim Operation is provided in the EF2 July'83 NUREG-0588 submittal, Volume 3.

Harsh, 2C, Reclassified - Located in a potentially harsh, accident - generated environment, NUREG-0588 Category 2C. Device reclassification is contained in EF2 July '83, NUREG-0588 submittal, Volume 3.

Harsh, 2C - Located in a potentially harsh, accident-generated environment; NUREG-0588 App. E Category 2C.

Harsh, Non-1E, 2C - Located in a potentially harsh, accident-generated environment; instrument, however, does not serve any safety function, therefore is not safety-related and is not included in the EQ program.

Mild Environment - Location of instrument is in a mild environment.

TABLE I

The following is a listing of all safety-related electrical equipment, NUREG-0588 Category 2A/2B and its qualification status, contained in DECo's NUREG-0588 July, '83 submittal which is associated with item B10 of Reg. Guide 1.97 Rev. 2.

Valve Number (associated operator)	Valve Position Switch	Manufacturer or Model #	Qual. Status
V17-2003 (2B2103F022A)	2B21N522A	NAMCO	Harsh, 2A, Qualified
	2B21N572A	NAMCO	Harsh, 2A, Qualified
	2B21N573A	NAMCO	Harsh, 2A, Qualified
V17-2007 (2B2103F028A)	2B21N528A	NAMCO	Harsh, 2A, Qualified
	2B21N574A	NAMCO	Harsh, 2A, Qualified
	2B21N575A	NAMCO	Harsh, 2A, Qualified
V5-2294 (2B21F434)	2B21N415 A&B	Target Rock	Harsh, 2A, Qualified
V17-2001 (2B2103F022B)	2B21N522B	NAMCO	Harsh, 2A, Qualified
	2B21N572B	NAMCO	Harsh, 2A, Qualified
	2B21N573B	NAMCO	Harsh, 2A, Qualified
V17-2005 (2B2103F028B)	2B21N528B	NAMCO	Harsh, 2A, Qualified
	2B21N574B	NAMCO	Harsh, 2A, Qualified
	2B21N575B	NAMCO	Harsh, 2A, Qualified
V17-2002 (2B2103F022C)	2B21N522C	NAMCO	Harsh, 2A, Qualified
	2B21N572C	NAMCO	Harsh, 2A, Qualified
	2B21N573C	NAMCO	Harsh, 2A, Qualified
V17-2006 (2B2103F028C)	2B21N528C	NAMCO	Harsh, 2A, Qualified
	2B21N574C	NAMCO	Harsh, 2A, Qualified
	2B21N575C	NAMCO	Harsh, 2A, Qualified
V17-2004 (2B2103F022D)	2B21N522D	NAMCO	Harsh, 2A, Qualified
	2B21N572D	NAMCO	Harsh, 2A, Qualified
	2B21N573D	NAMCO	Harsh, 2A, Qualified
V17-2008 (2B2103F028D)	2B21N528D	NAMCO	Harsh, 2A, Qualified
	2B21N574D	NAMCO	Harsh, 2A, Qualified
	2B21N575D	NAMCO	Harsh, 2A, Qualified
V17-2009 (2B2103F016)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V17-2010 (2B2103F019)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2194 (2E4150F006)	Internal to MOV	Limitorque	Harsh, 2A, JIO
V17-2031 (2E5150F008)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V17-2020 (2E4150F002)	Internal to MOV	Limitorque	Harsh, 2A, JIO
V17-2021 (2E4150F003)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V17-2088 (2E4150F600)	Internal to MOV	Limitorque	Harsh, 2A, Qualified

TABLE I

Valve Number (associated operator)	Valve Position Switch	Manufacturer or Model #	Qual. Status
V8-2162 (2E1150F015B)	Internal to MOV	Limitorque	Harsh, 2A, JIO
V8-2161 (2E1150F015A)	Internal to MOV	Limitorque	Harsh, 2A, JIO
V4-2144 (2T4804F603A)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V4-2154 (2T4804F605A)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2022 (2E2150F005B)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2021 (2E2150F005A)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V9-2044 (2G1154F600)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V9-2022 (2G1154F018)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V4-2080 (2T4901F601)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
VR3-3011 (2T4803F601)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V5-2159 (2T50F401B)	2T50N451B	Jamesbury	Harsh, 2A, JIO
V5-2160 (2T50F402B)	2T50N452B	Jamesbury	Harsh, 2A, JIO
V5-2161 (2T50F403B)	2T50N453B	Jamesbury	Harsh, 2A, JIO
V5-2162 (2T50F404B)	2T50N454B	Jamesbury	Harsh, 2A, JIO
V5-2163 (2T50F405B)	2T50N455B	Jamesbury	Harsh, 2A, JIO
V5-2164 (2T50F406B)	2T50N456B	Jamesbury	Harsh, 2A, JIO
V13-7364 (2P34F403A)	2P34N405A & 6A	Target Rock	Harsh, 2A, Qualified
V13-7374 (2P34F404A)	2P34N407A & 8A	Target Rock	Harsh, 2A, Qualified
V13-7360 (2P34F401A)	2P34N401A & 2A	Target Rock	Harsh, 2A, Qualified
V4-2188 (2T4901F602)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2169 (2E1150F021A)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2167 (2E1150F016A)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2170 (2E1150F021B)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2168 (2E1150F016B)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V13-7361 (2P34F401B)	2P34N401B	Target Rock	Harsh, 2A, Qualified
	2P34N402B	Target Rock	Harsh, 2A, Qualified
V8-2252 (2G3352F001)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2253 (2G3352F004)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V4-2143 (2T4804F603B)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V4-2153 (2T4804F605B)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V5-2151 (2T50F401A)	2T50N451A	Jamesbury	Harsh, 2A, JIO
V5-2152 (2T50F402A)	2T50N452A	Jamesbury	Harsh, 2A, JIO
V13-7365 (2P34F403B)	2P34N405B	Target Rock	Harsh, 2A, Qualified
	2P34N406B	Target Rock	Harsh, 2A, Qualified
V13-7375 (2P34F404B)	2P34N407B	Target Rock	Harsh, 2A, Qualified
	2P34N408B	Target Rock	Harsh, 2A, Qualified
V5-2153 (2T50F403A)	2T50N453A	Jamesbury	Harsh, 2A, JIO
V5-2154 (2T50F404A)	2T50N454A	Jamesbury	Harsh, 2A, JIO
V5-2155 (2T50F405A)	2T50N455A	Jamesbury	Harsh, 2A, JIO

TABLE I

Valve Number (associated operator)	Valve Position Switch	Manufacturer or Model #	Qual. Status
V5-2156 (2T50F406A)	2T50N456A	Jamesbury	Harsh, 2A, JIO
V8-2134 (2E1150F007B)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2136 (2E1150F024B)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V17-7368 (2P34F407)	2P34N413A	Target Rock	Harsh, 2A, Qualified
	2P34N413B	Target Rock	Harsh, 2A, Qualified
V13-7378 (2P34F409)	2P34N414A	Target Rock	Harsh, 2A, Qualified
	2P34N414B	Target Rock	Harsh, 2A, Qualified
V8-3849 (2G5100F604)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-3847 (2G5100F605)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2133 (2E1150F007A)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2135 (2E1150F024A)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2158 (2E1150F027B)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2156 (2E1150F028B)	Internal to MOV	Limitorque	Harsh, 2A, JIO
V8-2155 (2E1150F028A)	Internval to MOV	Limitorque	Harsh, 2A, JIO
V8-2157 (2E1150F027A)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-3832 (2G5100F600)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-3834 (2G5100F601)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-3831 (2G5100F602)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-3833 (2G5100F603)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V5-2158 (2T50F408A)	2T50N458A	Jamesbury	Harsh, 2A, JIO
V4-2142 (2T4804F602A)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V4-2156 (2T4804F606A)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V13-7369 (2P34F408)	2P34N414A	Target Rock	Harsh, 2A, Qualified
	2P34N414B	Target Rock	Harsh, 2A, Qualified
V13-7379 (2P34F410)	2P34N416A	Target Rock	Harsh, 2A, Qualified
	2P34N416B	Target Rock	Harsh, 2A, Qualified
V4-2140 (2T4804F601A)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V4-2148 (2T4804F604A)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V4-2139 (2T4804F601B)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V4-2149 (2T4804F604B)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V4-2141 (2T4804F602B)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V4-2155 (2T4804F606B)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V5-2166 (2T50F408B)	2T50N458B	Jamesbury	Harsh, 2A, JIO
V8-2202 (2E4150F042)	Internal to MOV	Limitorque	Harsh, 2A, JIO
V8-3850 (2G5100F606)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-3848 (2G5100F607)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2196 (2E4150F012)	Internal to MOV	Limitorque	Harsh, 2A, JIO
V8-2032 (2E2150F031B)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V8-2031 (2E2150F031A)	Internal to MOV	Limitorque	Harsh, 2A, Qualified
V13-7637 (2P34F405B)	2P34N409B	Target Rock	Harsh, 2A, Qualified
	2P34N410B	Target Rock	Harsh, 2A, Qualified
V13-7377 (2P34F406B)	2P34N411B	Target Rock	Harsh, 2A, Qualified
	2P34N412B	Target Rock	Harsh, 2A, Qualified

TABLE I

Valve Number (associated operator)	Valve Position Switch	Manufacturer or Model #	Qual. Status
V5-2157 (2T50F407A)	2T50N457A	Jamesbury	Harsh, 2A, JIO
V5-2165 (2T50F407B)	2T50N457B	Jamesbury	Harsh, 2A, JIO
V13-7366 (2P34F405A)	2P34N409A	Target Rock	Harsh, 2A, Qualified
	2P34N410A	Target Rock	Harsh, 2A, Qualified
V13-7376 (2P34F406A)	2P34N411A	Target Rock	Harsh, 2A, Qualified
	2P34N412A	Target Rock	Harsh, 2A, Qualified

ATTACHMENT 3

EQUIPMENT ASSOCIATED WITH NUREG-0737 COMMITMENTS

The following is a listing of all safety-related electrical equipment, NUREG-0588, Appendix E, Category 2A/2B, and its qualification status contained in DECo's NUREG-0588, July, 1983 submittal which is directly associated with each applicable section of NUREG-0737.

A. NUREG-0737 Clarification Item II.B.3 - Post-Accident Sampling

The following equipment (PIS No.) was installed for the Post Accident Sampling System (PASS).

- 2P34F401 A&B, F402 A&B, F403 A&B, F404 A&B, F405 A&B, F406 A&B, F407, F408, F409 & F410.

- 2P34N401 A&B, N402 A&B, N403 A&B, N404 A&B, N405 A&B, N406 A&B, N407 A&B, N408 A&B, N409 A&B, N410 A&B, N411 A&B, N412 A&B, N413 A&B, N414 A&B, N415 A&B, N416 A&B

These components can be found in the July, 1983 NUREG-0588 submittal, Volume II, System P34. They are qualified to NUREG-0588, Category II.

B. NUREG-0737 Clarification Item II.D.1 - Relief/Safety Valve Test Requirements

The following equipment (PIS No.) are the electrical operators for the safety-relief valves:

- 2B2104F013 A,B,C,D,E,F,G,H,J,K,L,M,N,P & R

These components can be found in the July 1983, NUREG-0588 submittal, Volume II, System B21. They are qualified to NUREG-0588, Category II.

C. NUREG-0737 Clarification Item II.D.3 - Valve Position Indication (SRV)

The following equipment (PIS No.) was installed for direct indication of SRV position.

- 2B21N410 A,B,C,D,E,F,G,H,J,K,L,N,N,P & R

These components can be found in the July, 1983, NUREG-0588 submittal, Volume II, System B21. They are qualified to NUREG-0588, Category II.

EEQ/29/JK.1
11/28/83

D. NUREG-0737 Clarification Item II.E.4.1 - Dedicated Hydro. Penetrations

Fermi - 2 has dedicated containment penetrations for the Hydrogen Recombiner System. The recombiners are safety-grade and redundant. The electrical equipment (PIS No.) associated with the recombiner system are as follows:

- 2T804B003 A&B, C001 A&B, F001 A&B, F002 A&B, F003 A&B, F601 A&B, F602 A&B, F603 A&B, F604 A&B, F605 A&B, F606 A&B,

- 2T4804B003 A&B, N164 A&B, N175 A&B, N176 A&B, N182 A&B, N186 A&B, N190 A&B, N193 A&B, N196 A&B, N203 A&B

These components can be found in the July 1983 NUREG-0588 submittal, Volume 2, System T48. They are either qualified to NUREG-0588 Cat. 2 or justified for interim operation.

E. NUREG-0737 Clarification Item II.E.4.2 - Containment Isolation Dependability

The following equipment (PIS No.) is associated with the containment isolation valves listed in Table H.II.E.4.2-1 of the FERMI-2 FSAR (Volume 12, Appendix H, Section H.II.E.4.2 and Volume 4, Chapter 6, Table 6.2-2 respectively)

Containment Penetration Number	Valve Number	Associated Elect. Equip. (PIS No.)	Qual. Status (Q-J)
X-7A	V17-2003	2B2103F022A	J
	V17-2007	2B2103F028A	J
	V5-2294	2B21F434	Q
X-7B	V17-2001	2B2103F022B	J
	V17-2005	2B2103F028B	J
X-7C	V17-2002	2B2103F022C	J
	V17-2006	2B2103F028C	J
X-7D	V17-2004	2B2103F022D	J
	V17-2008	2B2103F028D	J
X-8	V17-2009	2B2103F016	Q
	V17-2010	2B2103F019	Q
X-9A	V8-2194	2E4150F006	J
X-10	V17-2031	2E5150F008	Q
X-11	V17-2020	2E4150F002	J
	V17-2021	2E4150F003	Q
	V17-2088	2E4150F600	Q

E. NUREG-0737 Clarification Item II.E.4.2 - Containment Isolation Dependability (Cont.)

Containment Penetration Number	Valve Number	Associated Elect. Equip. (PIS No.)	Qual. Status (Q-J)
X-13A	V8-2162	2E1150F015B	J
X-13B	V8-2161	2E1150F015A	J
X-15	V4-2144	2T4804F603A	Q
	V4-2154	2T4804F605A	Q
X-16A	V8-2022	2E2150F005B	J
X-16B	V8-2021	2E2150F005A	J
X-18	V9-2005	2G1154F408	Q
	V9-2044	2G1154F600	Q
X-19	V9-2023	2G1154F409	Q
	V9-2022	2G1154F018	Q
X-22	V4-2079	2T49F465	Q
	V4-2080	2T4901F601	Q
X-25	VR3-3024	2T4803F602	Q
X-26	VR3-3011	2T4803F601	Q
X-27a	V5-2159	2T50F401B	J
X-27b	V5-2160	2T50F402B	J
X-27c	V5-2161	2T50F403B	J
X-27d	V5-2162	2T50F404B	J
X-27e	V5-2163	2T50F405B	J
X-27f	V5-2164	2T50F406B	J
X-27b	V13-7364	2P34F403A	Q
	V13-7374	2P34F404A	Q

E. NUREG-0737 Clarification Item II.E.4.2 - Containment Isolation Dependability (Cont.)

Containment Penetration Number	Valve Number	Associated Elect. Equip. (PIS No.)	Qual. Status (Q-J)
X-28cf	V13-7360	2P34F401A	Q
X-31B	VR3-2825	2T48F461	Q
X-29Be	V5-2231	2T50F420B	J
X-36	V4-2187	2T49F468	Q
	V4-2188	2T4901F602	Q
X-39A	V8-2169	2E1150F021A	Q
	V8-2167	2E1150F016A	Q
X-39B	V8-2170	2E1150F021B	Q
	V8-2168	2E1150F016B	Q
X-40Dd	V13-7361	2P34F401B	Q
X-43	V8-2252	2G3352F001	Q
	V8-2253	2G3352F004	Q
X-44	V4-2143	2T4804F603B	Q
	V4-2153	2T4804F605B	Q
X-47e	V5-2230	2T50F420A	J
X-48a	V5-2151	2T50F401A	J
X-48b	V5-2152	2T50F402A	J
X-48f	V13-7365	2P34F403B	Q
	V13-7375	2P34F404B	Q
X-48c	V5-2153	2T50F403A	J
X-48d	V5-2154	2T50F404A	J
X-48e	V5-2155	2T50F405A	J
X-48f	V5-2156	2T50F406A	J

E. NUREG-0737 Clarification Item II.E.4.2 - Containment Isolation Dependability (Cont.)

Containment Penetration Number	Valve Number	Associated Elect. Equip. (PIS No.)	Qual. Status (Q-J)
X-205A	V21-2016	2T23F410	Q
X-205B	V21-2015	2T23F409	Q
X-210A	V8-2134	2E1150F007B	Q
	V8-2136	2E1150F024B	Q
X-210B	V13-7368	2P34F407	Q
	V13-7378	2P34F409	Q
	V8-3849	2G5100F604	Q
	V8-3847	2G5100F605	Q
	V8-2133	2E1150F007A	Q
	V8-2135	2E1150F024A	Q
X-211A	V8-2158	2E1150F027B	Q
	V8-2156	2E1150F028B	J
X-211B	V8-2155	2E1150F028A	Q
	V8-2157	2E1150F027A	J
X-213A	V8-3832	2G5100F600	Q
	V8-3834	2G5100F601	Q
X-213B	V8-3831	2G5100F602	Q
	V8-3833	2G5100F603	Q
X-215	V5-2158	2T50F408A	J
	V4-2142	2T4804F602A	Q
	V4-2156	2T4804F606A	Q
	V13-7369	2P34F408	Q
	V13-7379	2P34F410	Q
X-218	V4-2140	2T4804F601A	Q
	V4-2148	2T4804F604A	Q
	V4-2139	2T4804F601B	Q
	V4-2149	2T4804F604B	Q
X-219	V4-2141	2T4804F602B	Q
	V4-2155	2T4804F606B	Q
	V5-2166	2T50F408B	J

E. NUREG-0737 Clarification Item II.E.4.2 - Containment Isolation Dependability (Cont.)

Containment Penetration Number	Valve Number	Associated Elect. Equip. (PIS No.)	Qual. Status (Q-J)
X-225	V8-2202	2E4150F042	J
X-227A	V8-3850	2G5100F606	Q
	V8-3848	2G5100F607	Q
	V8-2196	2E4150F012	J
	V8-2032	2E2150F031B	Q
X-227B	V8-2031	2E2150F031A	Q
X-230	V13-7367	2P34F405B	Q
	V13-7377	2P34F406B	Q
	V5-2157	2T50F407A	J
X-231	V5-2165	2T50F407B	J
	V13-7366	2P34F405A	Q
	V13-7376	2P34F406A	Q

The above "Associated Electrical Equipment (PIS No.)" can be found in the July, 1983 NUREG-0588 submittal, Volume II, in the various identified systems. The qualification status is given in the last column as; Q-Qualified to either NUREG-0588 Cat. I or II, or J-Justified For Interim Operation.

F. NUREG-0737 Clarification Item II.F.1 - Accident-Monitoring Instr.

- o The following equipment (PIS No.) was installed for containment High Range Radiation Monitoring.

  - 2D11N443 A&B
  - 2D11N443001
  - 2D11N443002

  These components can be found in the July, 1983 NUREG-0588 submittal, Volume II System D11. 2D11N443 A&B are qualified to NUREG-0588 Cat. II and 2D11N443001 & 0002 have been JIO'ed.

- o The following equipment (PIS No.) was modified to incorporate NUREG-0737 design ranges for containment pressure monitoring.

  2T5000N415 A&B

  These components can be found in the July, 1983 NUREG-0588, submittal, Volume II, System T50. They are qualified to NUREG-0588, Cat. II.

- o The following equipment (PIS No.) was modified to incorporate NUREG-0737 design ranges for containment water level:

  - 2T5000N406 A&B

  These components can be found in the July, 1983 NUREG-0588 submittal, Volume II, System T50. They are qualified to to NUREG-0588, Category II.

- o The following equipment is associated with the NUREG-0737 requirement for containment Hydrogen Monitoring:

  - Delphi K IV H-O analyzer panels H21-P292 & P293

  The internal components associated with the Delphi panel can be found in the July, 1983 NUREG-0588 submittal, System T50, pages 793-814 & 817-836 & 841-852 & 874 & 875. These components have been JIO'ed.

- o As stated in Detroit Edison Response to 10CFR50.49 (Letter EF2-65,629 dated 11-1-83), Item b3, the radioactive noble gas, iodine and particulate effluent monitors are located in a mild environment and therefore are not subject to 10CFR50.49 requirements.

G. NUREG-0737 Clarification Item II.F.2 - Instrumentation for Detection of Inadequate Core Cooling

The following equipment (PIS No.) are the fuel zone reactor water level transmitters used to detect the onset and degree of inadequate core cooling:

- 2B21G3N085 A&B

These components can be found in the July 1983, NUREG-0588 submittal, Volume II, System B21. They are qualified to NUREG-0588, Category II.

H. NUREG-0737 Clarification Item II.K.3.15 - Modify Break - Detection Logic to Prevent Spurious Isolation of HPCI and RCIC Systems

The following equipment is associated with the differential pressure sensor modification discussed in the Fermi-2 FSAR, App. H, Section H.II.K.3.15:

- 2E4100N057 A&B

These components can be found in the July 1983, NUREG-0588 submittal, Volume II, System E41. They have been JIO'ed for the events to which they are exposed and must operate, however, these components are not exposed to a HPCI line break and therefore are not required to be qualified for that accident.

I. NUREG-0737 Clarification Item II.K.3.24 - Confirm Adequacy of Space Cooling for HPCI & RCIC Systems

The following equipment (PIS No.) is associated with providing adequate space cooling for HPCI System

- 2T41B022, 2T41000000022, 2T41000000814, 2T41000000815, 2T4100W038

These components can be found in the July, 1983, NUREG-0588 submittal, Volume II, System T41. They have been JIO'ed.

J. NUREG-0737 Clarification Item II.K.3.28 - Study of Accumulators on ADS Valves

The following equipment (PIS No.) is associated with the pneumatic supply to the accumulators on the ADS valves.

- 2T4901F601, F602, 2T49F465, F466, F467, F468, F469

These components can be found in the July, 1983, NUREG-0588 submittal, Volume II, System T49. They are qualified to NUREG-0588, Cat. II.

K. NUREG-0737 Clarification Item II.K.1.5 - Safety Related Valve Position

The following equipment (PIS No.) is associated with safety-related valve position indication of all applicable safety related valves:

Safety Related Valve Operator (PIS No.)	Valve Position Indication Equip. (PIS No.)	Qual. Status (Q-J)
2B2103F016	Integral to MOV	Q
2B2103F019	Integral to MOV	Q
2B2103F022A	2B21N522A	Q
	2B21N572A	Q
	2B21N573A	Q
2B2103F022B	2B21N522B	Q
	2B21N572B	Q
	2B21N573B	Q
2B2103F022C	2B21N522C	Q
	2B21N572C	Q
	2B21N573C	Q
2B2103F022D	2B21N522D	Q
	2B21N572D	Q
	2B21N573D	Q
2B2103F028A	2B21N528A	Q
	2B21N574A	Q
	2B21N575A	Q
2B2103F028B	2B21N528B	Q
	2B21N574B	Q
	2B21N575B	Q
2B2103F028C	2B21N528C	Q
	2B21N574C	Q
	2B21N575C	Q
2B2103F028D	2B21N528D	Q
	2B21N574D	Q
	2B21N575D	Q

K. NUREG-0737 Clarification Item II.K.1.5 - Safety Related Valve Position (Cont.)

Safety Related Valve Operator (PIS No.)	Valve Position Indication Equip. (PIS No.)	Qual. Status (Q-J)
2B2103F431	2B2103N404 A&B	Q
2B2103F432	2B2103N403 A&B	Q
2B2103F433	2B2103N494 A&B	Q
2B2103F434	2B2103N415 A&B	Q
2B2103F435	2B2103N402 A&B	Q
2B2103F436	2B2103N401 A&B	Q
2B2103F437	2B2103N493 A&B	Q
2B2103F438	2B2103N413 A&B	Q
2B2103F600	Integral to MOV	Q
2B2104F013A	2B21N410A	Q
2B2104F013A	2B21N410B	Q
2B2104F013C	2B21N410C	Q
2B2104F013D	2B21N410D	Q
2B2104F013E	2B21N410E	Q
2B2104F013F	2B21N410F	Q
2B2104F013G	2B21N410G	Q
2B2104F013H	2B21N410H	Q
2B2104F013J	2B21N410J	Q
2B2104F013K	2B21N410K	Q

K. NUREG-0737 Clarification Item II.K.1.5 - Safety Related Valve Position (Cont.)

Safety Related Valve Operator (PIS No.)	Valve Position Indication Equip. (PIS No.)	Qual. Status (Q-J)
2B2103F013L	2B21N410L	Q
2B2103F013M	2B21N410M	Q
2B2103F013N	2B21N410N	Q
2B2103F013P	2B21N410P	Q
2B2103F013R	2B21N410R	Q
2B3105F031A	Integral to MOV	J
2B3105F031B	Integral to MOV	J
2E1150F007A	Integral to MOV	Q
2E1150F007B	Integral to MOV	Q
2E1150F010	Integral to MOV	Q
2E1150F015A	Integral to MOV	J
2E1150F015B	Integral to MOV	J
2E1150F016A	Integral to MOV	Q
2E1150F016B	Integral to MOV	Q
2E1150F017A	Integral to MOV	J
2E1150F017B	Integral to MOV	J
2E1150F021A	Integral to MOV	Q
2E1150F021B	Integral to MOV	Q
2E1150F024A	Integral to MOV	Q
2E1150F024B	Integral to MOV	Q

K. NUREG-0737 Clarification Item II.K.1.5 - Safety Related Valve Position (Cont.)

Safety Related Valve Operator (PIS No.)	Valve Position Indication Equip. (PIS No.)	Qual. Status (Q-J)
2E1150F027A	Integral to MOV	Q
2E1150F027B	Integral to MOV	Q
2E1150F028A	Integral to MOV	J
2E1150F028B	Integral to MOV	J
2E1150F048A	Integral to MOV	Q
2E1150F048B	Integral to MOV	Q
2E1150F068A	Integral to MOV	Q
2E1150F068B	Integral to MOV	Q
2E1150F073	Integral to MOV	Q
2E1150F075	Integral to MOV	Q
2E2150F005A	Integral to MOV	Q
2E2150F005B	Integral to MOV	Q
2E2150F031A	Integral to MOV	Q
2E2150F031B	Integral to MOV	Q
2E4150F001	Integral to MOV	Q
2E4150F002	Integral to MOV	J
2E4150F003	Integral to MOV	Q
2E4150F004	Integral to MOV	J
2E4150F006	Integral to MOV	J
2E4150F012	Integral to MOV	J
2E4150F041	Integral to MOV	J

K. NUREG-0737 Clarification Item II.K.1.5 - Safety Related Valve Position (Cont.)

Safety Related Valve Operator (PIS No.)	Valve Position Indication Equip. (PIS No.)	Qual. Status (Q-J)
2E4150F042	Integral to MOV	J
2E4150F059	Integral to MOV	Q
2E4150F600	Integral to MOV	Q
2E5150F008	Integral to MOV	Q
2G1154F018	Integral to MOV	Q
2G1154F600	Integral to MOV	Q
2G3352F001	Integral to MOV	Q
2G3354F004	Integral to MOV	Q
2G5100F600	Integral to MOV	Q
2G5100F601	Integral to MOV	Q
2G5100F602	Integral to MOV	Q
2G5100F603	Integral to MOV	Q
2G5100F604	Integral to MOV	Q
2G5100F605	Integral to MOV	Q
2G5100F607	Integral to MOV	Q
2P34F401A	2P34N401A & N402A	Q
2P34F401B	2P34N401B & N402B	Q
2P34F402A	2P34N403A & N404A	Q
2P34F402B	2P34N403B & N404B	Q
2P34F403A	2P34N405A & N406A	Q
2P34F403B	2P34N405B & N406B	Q

K. NUREG-0737 Clarification Item II.K.1.5 - Safety Related Valve Position (Cont.)

Safety Related Valve Operator (PIS No.)	Valve Position Indication Equip. (PIS No.)	Qual. Status (Q-J)
2P34F404A	2P34N407A & N408A	Q
2P34F404B	2P34N407B & N408B	Q
2P34F405A	2P34N409A & N410A	Q
2P34F405B	2P34N409B & N410B	Q
2P34F406A	2P34N411A & N412A	Q
2P34F406B	2P34N411B & N412B	Q
2P34F407	2P34N413A & N413B	Q
2P34F408	2P34N414A & N414B	Q
2P34F409	2P34N415A & N415B	Q
2P34F410	2P34N416A & N416B	Q
2P4400F601A	Integral to MOV	Q
2P4400F601B	Integral to MOV	Q
2P4400F602A	Integral to MOV	Q
2P4400F602B	Integal to MOV	Q
2P4400F603A	Integral to MOV	Q
2P4400F603B	Integral to MOV	Q
2P4400F604	Integral to MOV	Q
2P4400F605A	Integral to MOV	Q
2P4400F605B	Integral to MOV	Q
2P4400F608	Integral to MOV	Q
2P4400F614	Integral to MOV	Q

K. NUREG-0737 Clarification Item II.K.1.5 - Safety Related Valve Position (Cont.)

Safety Related Valve Operator (PIS No.)	Valve Position Indication Equip. (PIS No.)	Qual. Status (Q-J)
2T4803F601	Integral to MOV	Q
2T4803F602	Integral to MOV	Q
2T4804F001A	Integral to MOV	Q
2T4804F002A	Integral to MOV	Q
2T4804F002B	Integral to MOV	Q
2T4804F003A	Integral to MOV	Q
2T4804F003B	Integral to MOV	Q
2T4804F601A	Integral to MOV	Q
2T4804F601B	Integral to MOV	Q
2T4804F602A	Integral to MOV	Q
2T4804F602B	Integral to MOV	Q
2T4804F603A	Integral to MOV	Q
2T4804F603B	Integral to MOV	Q
2T4804F604A	Integral to MOV	Q
2T4804F604B	Integral to MOV	Q
2T4804F605A	Integral to MOV	Q
2T4804F605B	Integral to MOV	Q
2T4804F606A	Integral to MOV	Q
2T4804F606B	Integral to MOV	Q
2T4901F601	Integral to MOV	Q
2T4901F602	Integral to MOV	Q

K. NUREG-0737 Clarification Item II.K.1.5 - Safety Related Valve Position (Cont.)

Safety Related Valve Operator (PIS No.)	Valve Position Indication Equip. (PIS No.)	Qual. Status (Q-J)
2T50F401A	2T50N451A	J
2T50F401B	2T50N451B	J
2T50F402A	2T50N452A	J
2T50F402B	2T50N452B	J
2T50F403A	2T50N453A	J
2T50F403B	2T50N453B	J
2T50F404A	2T50N454A	J
2T50F404B	2T50N454B	J
2T50F405A	2T50N455A	J
2T50F405B	2T50N455B	J
2T50F406A	2T50N456A	J
2T50F406B	2T50N456B	J
2T50F407A	2T50N457A	J
2T50F407B	2T50N457B	J
2T50F408A	2T50N458A	J
2T50F408B	2T50N458B	J

The above "Valve Position Indication Equipment (PIS No.)" can be found in the July, 1983 NUREG-0588 submittal, Volume II, in the various identified systems. The Qualification Status of this Valve Position Indication Equipment is given in the last column; Q-Qualified to either NUREG-0588 Cat. I or II or J-Justified for Interim Operation. The associated valve operator is given in the first column for information.

Attachment 4

Clarification of Component Reclassification Criterion No. 1 described in Fermi 2 NUREG-0588, July 1983 submittal, Volume III

History

A concern of the NRC, during the NRC/DECo meeting in Bethesda, Maryland on October 19, 1983, was the criteria used by DECo in preparing the component reclassifications. The criterion in question, taken from the Fermi-2 NUREG-0588, July 1983 submittal, is as follows:

"(1) Equipment is not required to perform essential safety functions in the Harsh Environment, and equipment failure in the Harsh Environment will not impact safety-related functions or mislead an operator".

The term "... Equipment is not required to perform essential safety functions in the Harsh Environment and equipment failure ...", taken from the above DECo criterion, was questioned by the NRC as not being consistent with the NRC established criteria given in the Fermi-2 Safety Evaluation Report (SER), NUREG-0798, Supplement 2 dated January 1982, Appendix F. This NRC criterion was given as follows:

"(1) Equipment does not perform essential safety functions in the Harsh Environment, and equipment failure in the Harsh Environment will not impact safety-related functions or mislead an operator".

The above NRC criterion is assumed to be developed from the definition given in NUREG-0588, Appendix E, Paragraph 2C which states:

"c. Equipment that will experience environmental conditions of Design Basis Accidents through which it need not function for mitigation of said accidents, and whose failure (in any mode) is deemed not detrimental to plant safety or accident mitigation ..."

The basis for this assumption is that NUREG-0588 is given as the governing document which establishes the requirements which applicants must meet regarding environmental qualification of safety-related electrical equipment in order to satisfy those aspects of 10CFR50, Appendix A, General Design Criterion (GDC) 4. This governing document was mandated via the Commission Memorandum and Order CLI-80-21 issued on May 23, 1980.

EEQ/29/J.4
11/18/83

Discussion

The derivation of the Component Reclassification Criteria in question was based on the criteria given in the Fermi-2 SER, NUREG-0798, Supplement 2, dated January 1982 with further clarification taken from NUREG-0588, Appendix E, paragraph 2C definition. DECo considers the wording "... is not required to function...", as stated in the Component Reclassification Criteria, consistent with and satisfies both the SER and NUREG-0588 definitions.

In addition, as per compliance to 10CFR50.49 (b) (1), DECo has submitted all safety-related electrical equipment relied upon to remain functional during and following the considered Design Basis Events. Applying this terminology to NUREG-0588, Appendix E, paragraph 2C equipment, the resultant definition would be "safety-related electrical equipment not relied upon to remain functional during and following the considered Design Basis Events and whose failure (in any mode) will not impact safety-related functions or mislead an operator. Again, as stated in the above paragraph, the wording "... not required to function...", as stated in the Component Reclassification Criteria, is consistent with and satisfies the requirements of 10CFR50.49.

Based on the above discussion, DECo considers the Component Reclassification Criteria submitted in the NUREG-0588, July 1983 submittal consistent with the criteria established by the NRC. No further action is required to resolve this concern.

ATTACHMENT 2

List of Reg. Guide 1.97 Cat. 1 and 2 Instruments

Reg. Guide 1.97 Ref.	Parameter	Instrument Numbers (PIS NO.)	Manufacturers or Model Number	NUREG-0588 Submittal Qual. Status (See Notes on Sht. 10)
D3 (Cat 2)	Suppression Chamber Spray Flow (RHR Flow)	E11-N015 A&B (sensor)	GEMAC-555	Harsh, 2A, JIO
		E11-K600 A&B (Sq rt. conv)	GEMAC-565	Mild Environment
		E11-K603 A&B (pwr. supply)	GEMAC-570	Mild Environment
		E11-R603 A&B (indicator)	HAYS-REP 360	Mild Environment
		E11-R608 A&B (recorder)	L&N Speedomax-M 1 pen	Mild Environment
D4 (Cat 2)	Drywell Pressure Narrow Range	T50-N401 A&B (sensor)	Rosemount 1152GP5N22PB	Harsh, 2C, Reclassified
		T50-K800 A&B (pwr. supply)	GEPPD #184C4571	Mild Environment
		T50-R802 A&B (recorder)	L&N #833-13-13-13-00-00	Mild Environment
D7 (Cat 2)	Drywell Atmosphere Temperature	T50-N409 B & 12A (sensor)	Dual Type T Thermocouple	Harsh, 2A, Qualified
		T50-K805 & K808 (cond)	Validyne TC-292	Mild Environment
		T50-R800 A&B (recorder)	L&N Speedomax 'W' Mark III	Mild Environment
D8 (Cat 2)	Drywell Spray Flow (RHR Flow)	E11-N015 A&B (sensor)	GEMAC-555	Harsh, 2A, JIO
		E11-K600 A&B (sq rt. conv)	GEMAC-565	Mild Environment
		E11-K603 A&B (pwer. suppy)	GEMAC-570	Mild Environment
		E11-R603 A&B (indicator)	HAYS-REP 360	Mild Environmen.
		E11-R608 A&B (recorder)	L&N Speedomax-M 1-pen	
D9 (Cat 2)	Main Steam line Isolation Valves Leakage Control System Pressure	B21-N484 & N487 (sensor)	Rosemount 1153D85	Harsh, 2A Qualified
		B21-K815 & K827 (converter)	Foxboro N2AI-I3V	Mild Environment
		B21-K845 & K847 (converter)	Foxboro N2A0-VAI	Mild Environment
		B21-R807 & R808 (indicator)	Hays Rep 3600 V-5A	Mild Environment
D10 (Cat 2)	Primary Systems Safety Relief Valve Positions	B21-N410 A-H (sensor)	GE/PCI A17-1P (N)	Harsh, 2A, Qualified
		B21-N410 J-N (sensor)	GE/PCI A17-1P (N)	Harsh, 2A, Qualified
		B21-N410 P&R (sensor)	GE/PCI A17-1P (N)	Harsh, 2A, Qualified
		B21-P090-1-2 (relays)	GE Assembly	Mild Environment
		Status Lamps, Control Room		Mild Environment
D11 (Cat 2)	Isolation Condenser System Shell-Side Water Level	We do not have an isolation condenser	N/A	
		-		
		-		
		-		
D12 (Cat 2)	Isolation Condenser System Valve Position	-	N/A	
		-		