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October 19, 1994
NRC-94-0098

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Reference: Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-43

Subject: Submittal of Documents Related to Fermi 2 Turbine
Generator Repairs and Restart from the Fourth Refueling
Outage

The purpose of this letter is to submit non-proprietary documents related to Fermi 2 Turbine Generator repairs, actions taken as a result of the December 25, 1993 event, and restart from the fourth refueling outage.

Advanced copies of these documents have already been provided to the NRC staff for their review and some of them were also discussed in various meetings held recently between Detroit Edison and the NRC. A list of the attached documents are enclosed herewith.

If you have any questions regarding these documents, please contact Mr. Girija S. Shukla at (313) 586-4270.

Sincerely,

Robert McKeon

Enclosure
Attachments

cc: w/o attachments
T. G. Colburn
J. B. Martin
M. P. Phillips
T. Vogel

9410260088 941019
PDR ADOCK 05000341
PDR

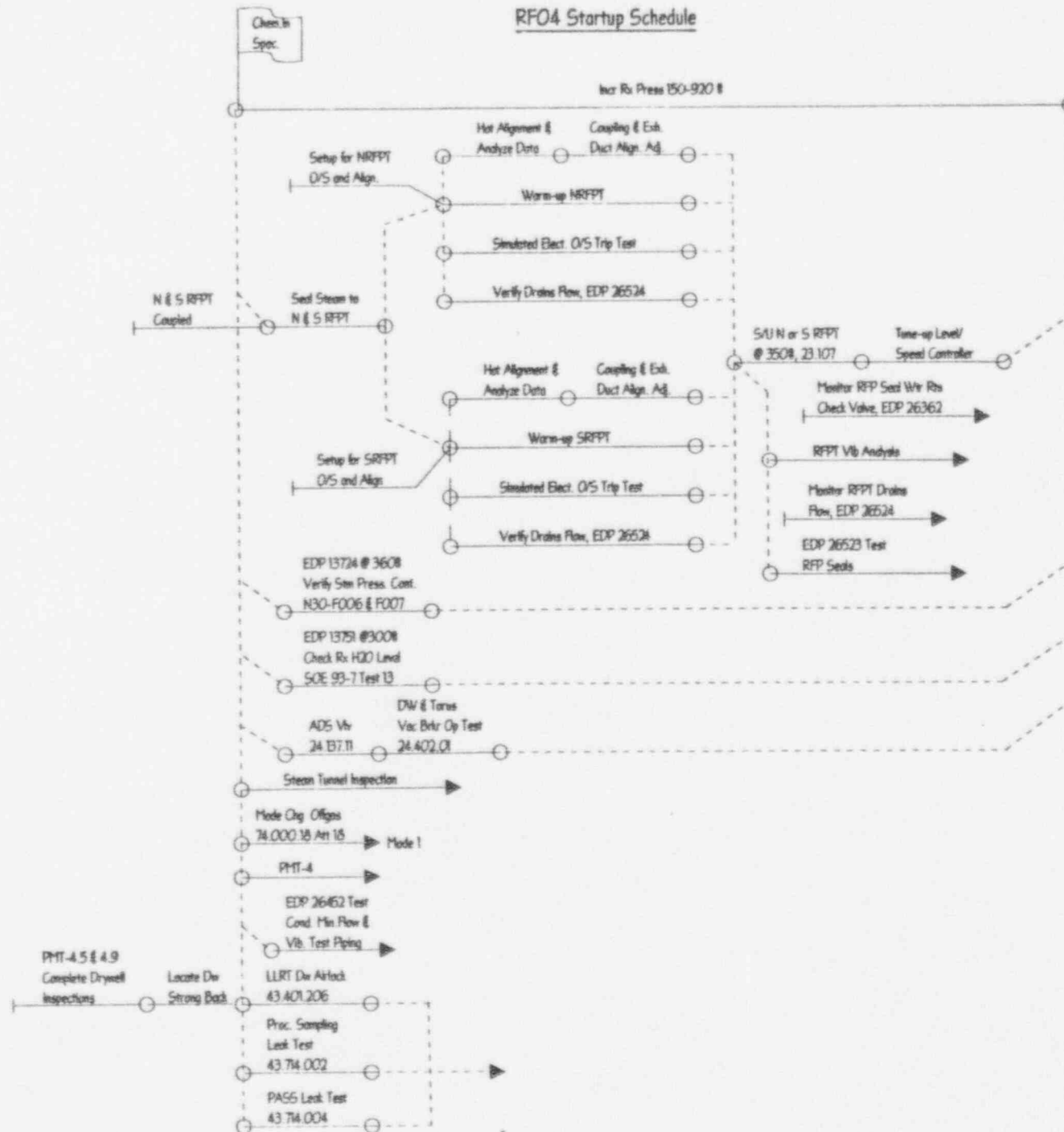
IE24

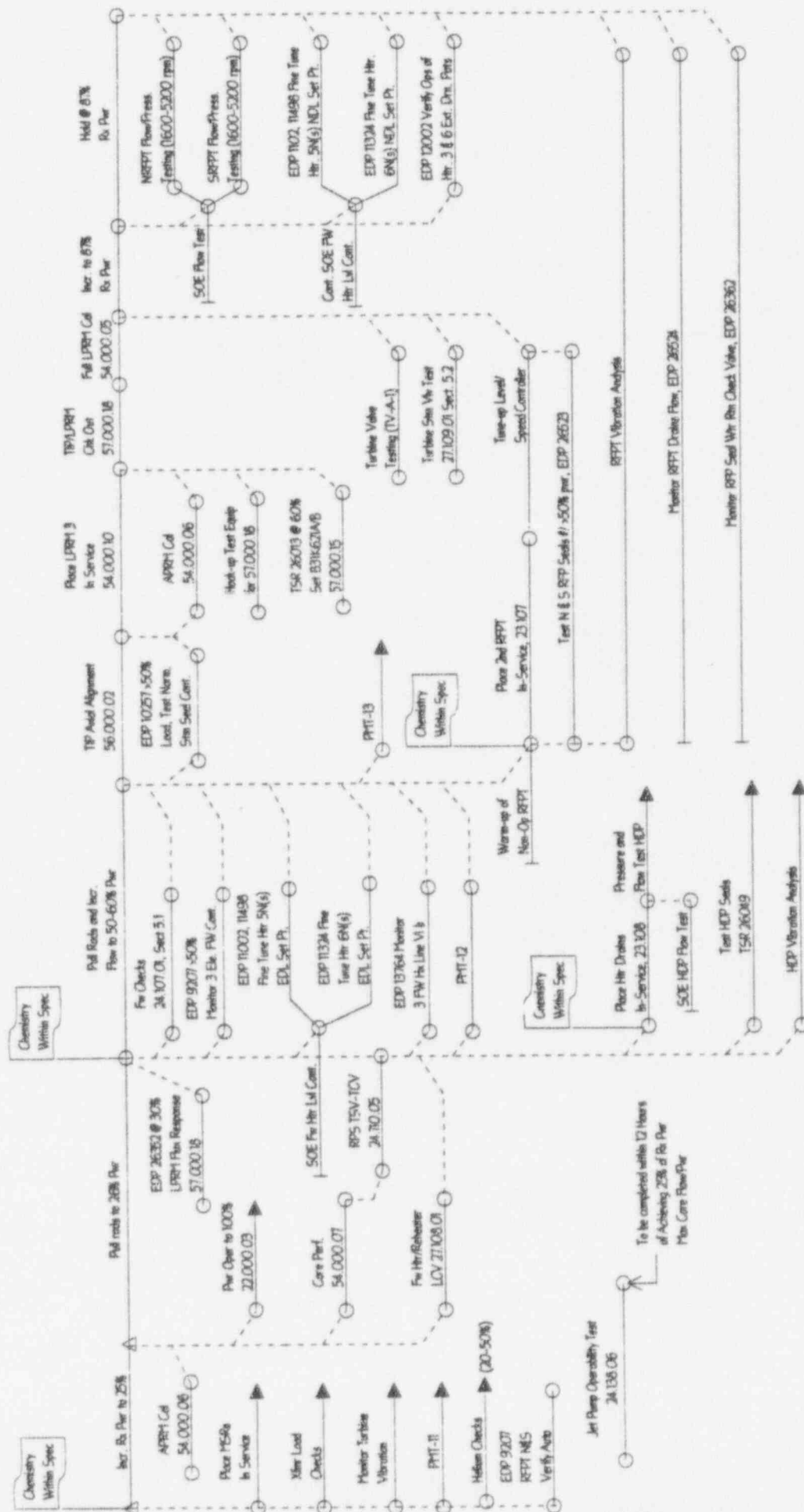
LIST OF ATTACHED NON-PROPRIETARY DOCUMENTS RELATED TO
FERMI 2 RESTART FROM THE FOURTH REFUELING OUTAGE

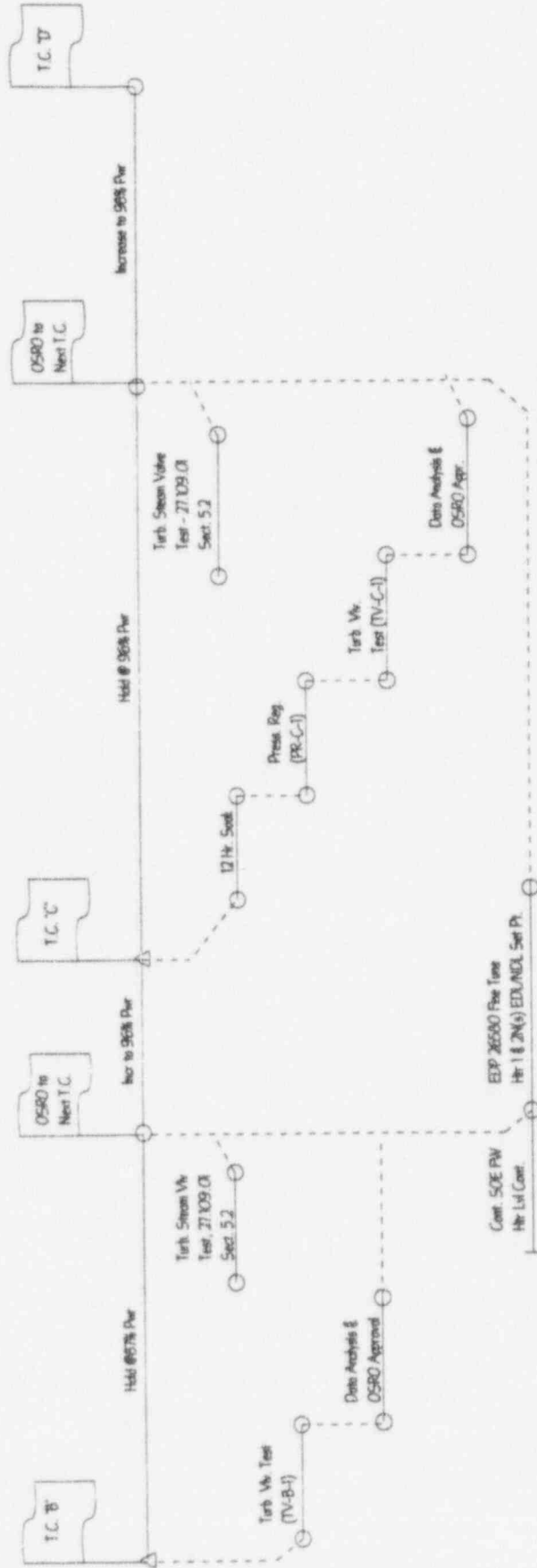
1. Draft RFO4 Startup scheduled dated 7/16/94.
2. Startup Chemistry Controls, one page flow diagram.
3. RFO4 Modification Status; Plant Engineering Report dated 7/21/94.
4. Core map showing fuel crud sample locations.
5. Hopper report analyzing data from seismic monitoring system; attached to R. Bryer memo to File T1-3680 dated 8/5/94.
6. Final Report Structural Walkdown with forwarding Alchalabi memo to McKeon dated 8/8/94.
7. One page sketch showing LP Stage 7 & 8 pressure plate installation.
8. Hopper and Associates Report on Post event seismic monitoring instrumentation evaluation; dated 2/4/94.
9. Engineering design documents and calcs in response to questions from John Ma in a conference call on 9/1/94; design calc DC-5882 on overhead crane damage evaluation and TSR-26565 describing repairs to Turbine Bearing Beam.
10. Executive Summary - Root Cause Report dated 8/27/94.
11. DECo NDE Summary Report, Rev. 1; L. G. Fron & P. K. Hudson memo to L. C. Fron dated 10/11/94, (TMTB-94-0025).
12. Memo from K. Howard to R. Newkirk; dated 9/26/94 responding to NRC questions on tank pedestal and turbine overhead crane inspections.
13. Turbine generated Missile Analysis Report dated 9/30/94 (DC-5144).
14. Memo from K. Howard to R. Newkirk, dated 10/17/94 on Turbine Overhead Crane (TMPE-94-0588).
15. Turbine Missile Accident Safety Evaluation, SE-94-0073, Rev. 1; dated 10/6/94.

ATTACHMENT 1

RFO4 Startup Schedule







RFO4 Startup Schedule (Continued)

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ATTACHMENT 2

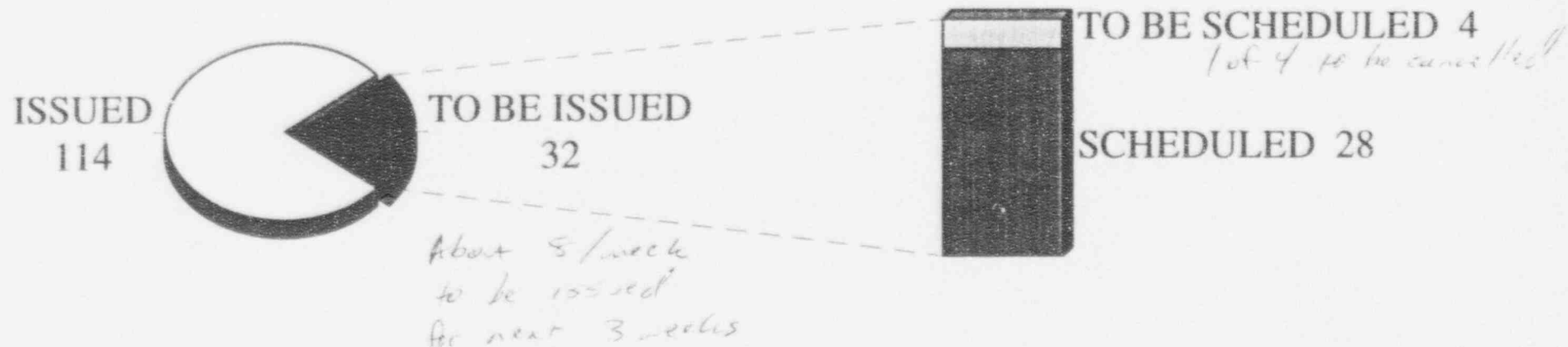
Fermi 2 Startup Chemistry Controls



ATTACHMENT 3

PLANT ENGINEERING RF04 MODIFICATION STATUS

146 TOTAL



STATUS AS OF: July 21, 1994

DOC TYPE	DOC #	R E V	DESCRIPTION	MOD OWNER	A / E	TARGET ISSUE DATE	F-CAST ISSUE DATE	COMMENT/REFERENCE	SCHED. IMPLEM. DATE	ON OUT LST	DATE ISSUED BY P.E.
RF04 DESIGN CHANGES - TO BE ISSUED											
EDP	11738		CONTROL ROOM BREATHING AIR MOD	BLACHA		24-May-94	28-Jul-94		28-Jul-94	X	
EDP	11881		REPLACE C11,C32,N20,&N21 BARTON TRANSMITTERS	HOSCILA	S&L	06-Jul-94	02-Aug-94	INCLUDES TSR 26322	21-Jul-94	X	
EDP	13548		REPLACE HYDROGEN MONITOR-OFF GAS	PELUSO	CDA	27-Jul-94	24-Aug-94		15-Aug-94	X	
EDP	13813		REROUTE RWCU VALVE ACCUMULATOR DRAIN LINES	NG		31-Aug-94			TBS	X	
EDP	13958		OFFGAS PREHEATER VENT VALVE	NICK	S&L	25-Aug-94	16-Aug-94		01-Aug-94	X	
EDP	14080		OBSOLETE SDV SOLENOID VALVE REPLACEMENT	MAREK	S&L	28-Jul-94			18-Jul-94	X	
EDP	14098		OFF GAS RAPID RECOMBINATION MODIFICATION	NICK	S&L	25-Aug-94			01-Aug-94	X	
EDP	26043		REMOVE HIGH RAD ALARMS IN CCHVAC	WOLFE		07-Sep-94			TBS	X	
EDP	26116		REPLACE SWGR ROOM CONDENSING UNITS	JAX	S&L	07-Jun-94	02-Aug-94		08-Aug-94	X	
EDP	26117		REPLACE OSC A/C UNITS	DEFIBAUGH	S&L	27-Jun-94	02-Aug-94		06-Aug-94	X	
EDP	26182		RWM SINGLE ROD SCRAM TIME	MAREK		18-May-94	29-Jul-94	DCAT PRIOR TO RELOAD	20-Jul-94	X	
EDP	26310	A	ADD MOV G33F220	PATEL	S&L	29-Jul-94		PART 1 ISSUED <i>Part 2 going out for OSR review</i>	17-Jun-94	X	06-Jul-94
EDP	26312		ABANDON EXTER T50 HEAT TRACING	KHAN	S&L	27-Jul-94			01-Aug-94	X	
EDP	26321		REPLACE MAIN TURB VIBRATION INSTRUMENTATION	PELUSO	S&L	03-Aug-94			25-Jul-94	X	
EDP	26324		MOD RB BASEMENT SW QUAD EQUIP HATCH COVER	NG		15-Aug-94			30-Aug-94	X	
EDP	26332		OFFGAS CHILLER CONTROL PANEL MOD	DEFIBAUGH	S&L	01-Jul-94	29-Jul-94		08-Aug-94	X	
EDP	26356		INDEPT LEVEL CONTROL FOR MAIN CONDENSER	BANEK	S&L	08-Jun-94	26-Jul-94		25-Jul-94	X	
EDP	26367		STATIC EXCITER	KONJA	S&L	01-Jul-94	02-Aug-94		22-Jul-94	X	
EDP	26408		REPLACE GEMAC CONTROLLER FOR N62F406A&B	PELUSO		TBS		SCOPE DELETE IN PROCESS	02-Aug-94	X	
EDP	26409		REPLACE GEMAC CONTROLLER FOR N62F401A&B	SAQUETON	S&L	10-Aug-94			17-Aug-94	X	
EDP	26436		PCRMS COND REMOVAL MOD	KHAN	S&L	27-Jul-94			01-Aug-94	X	
EDP	26524		REDESIGN N&S RFPT DRAIN PIPING	BURR	S&L	05-Aug-94			25-Jul-94	X	
EDP	26660		BOTTOM HEAD DRAIN THERMOCOUPLE MOD	BREGNI		29-Jul-94			TBS	X	
EDP	26664		INSTALL TAPS FOR FUTURE HYDROGEN INJECTION	WILGER	S&L	08-Aug-94			TBS	X	
EDP	26668		SLC TEST LOOP MOD IFICATION	TEMPLE		TBS			TBS	X	

25 SUB TOTAL

DOC TYPE	DOC #	R E V	DESCRIPTION	MOD OWNER	A / E	TARGET ISSUE DATE	F-CAST ISSUE DATE	COMMENT/REFERENCE	SCHED. IMPLEM. DATE	ON OUT LST	DATE ISSUED BY P.E.
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RF04 DESIGN CHANGES - TO BE ISSUED NOT ON OUTAGE LIST

EDP	12767		GENERATOR RELAY MOD	PIFER	CDA	09-Aug-94			TBS		
EDP	26580		SEPARATE HTR 1 & 2 LEVEL CONTROLS	BANEK	S&L	24-Aug-94			TBS		
ABN	25583		ADD QUICKTEST CABLES TO MOV FOR MOV TESTING	FRANCIS		21-Jul-94	25-Jul-94	SPEC REVISION	TBS		
EDP	26678		REPLACE REACTOR VESSEL FLANG TEMP RCDR	KLEMPNER		30-Aug-94			TBS		
EDP	26726		TURBINE 7&8 STAGE PRESSURE PLATES	TASSELL		02-Aug-94			TBS		
EDP	26749		HWC INSTRUMENTATION MODIFICATION	AMIN		TBS		ADDED 20-JUL	TBS		
EDP	26753		PROVIDE INTERLOCKS FOR HFP AND HWC EQUIP	AMIN		TBS		ADDED 20-JUL	TBS		

7 SUB TOTAL

32 TOTAL

DOC TYPE	DOC #	R E V	DESCRIPTION	MOD OWNER	A / E	TARGET ISSUE DATE	F-CAST ISSUE DATE	COMMENT/REFERENCE	SCHED. IMPLEM. DATE	ON OUT LST	DATE ISSUED BY P.E.
RF04 DESIGN CHANGES COMPLETED											
EDP	5173		ADD ATWS TRIP TO RECIRC PUMP DRIVE MOTORS	KLEMPNER		08-Sep-93		EOC 93-0009		X	15-Sep-93
EDP	9207		INSTALL FEED FLOW/STEAM FLOW MISMATCH LIMITER	PELUSO		07-Apr-93				X	31-Mar-93
EDP	9569		CONDENSER WATERBOX PLATFORM	ABDALLAH		07-Apr-93				X	17-Jan-93
EDP	10201		REAC PRESS CONTRL SYS PRESS REG ISOLATION	WOODEN	GE	17-Jun-94	27-Jun-94		12-Jul-94	X	30-Jun-94
EDP	10257		SPLIT/UPGRADE GLAND STEAM LOCAL CONTROLLER	PELUSO		02-Jul-93				X	01-Jul-93
EDP	10810		FPCCU SKIMMER SURGE TANK LS REPLACEMENT	BREGNI		30-Mar-94				X	30-Mar-94
EDP	11002		# 5 N&S. FEEDWATER HEATERS - INDEP CONTROLS	BANEK		21-Feb-94				X	10-Mar-94
EDP	11062		TRIP CUT OFF SWITCHES FOR 64B-B7 & 65E-E7	ACHARYA		05-May-93				X	07-Apr-93
EDP	11222		NOSE CONE MOD	DROTAR		N/A				X	30-May-90
EDP	11240		REPLACE CONTROLLER FOR C11F412	MAREK		20-May-94			26-May-94	X	11-May-94
EDP	11324		# 6 N&S FEEDWATER HEATER - INDEP CONTROLS	BANEK		16-Aug-93				X	31-Aug-93
EDP	11492		B31/T49 VLV POS IND MOD TO RG 1.97 REQUIREMENTS	KHAN		11-Aug-93		EOC 93-0004		X	31-Aug-93
EDP	11493		UPGRD B21R610 IND LOOP TO RG 1.97 REQUIREMENTS	HAUPT		28-Jul-93		EOC 93-0005		X	26-Jul-93
EDP	11498		INCR FREQ RESP OF N22F415 A,B #5 FW HTRS	MAREK		08-Feb-91				X	08-Feb-91
EDP	11583		CHANGE SETPOINTS FOR VALVE E1100F056A/B	WILLIAMS		18-Jun-91				X	18-Jun-91
EDP	11629		RECORDER REPLACEMENT	RICHARDS		N/A				X	23-Apr-93
EDP	11655		HPCI TEST RETURN VALVE MOD - E41-F011	DROTAR		15-Feb-94		EOC 94-0001		X	14-Mar-94
EDP	12002		ADD DRAINS TO 3N,4N, &6N EXTRACTION STEAM LINES	TEMPLE		08-Apr-94				X	14-Apr-94
EDP	12447	A	ADD VALVES AND REPLACE STEAM EXHAUSTERS	DEFIBAUGH		29-Mar-94		EOC 93-0008		X	27-Apr-94
EDP	12689		DELETE AUTO CONTROL CKT FROM FAN COIL UNITS	SAQUETON		10-Aug-93				X	18-Aug-93
EDP	12727		PROTECTIVE COVERS FOR PUSHBUTTONS	BANEK		27-Jul-94			18-Jul-94	X	08-Jul-94
EDP	12836	A	C11 RELIEF VALVE MOD	GRIMES		30-Sep-93				X	01-Oct-93
EDP	12889		E1150F007B CONTINGENCY VALVE REPLACEMENT	BLACHA		N/A				X	16-Sep-92
EDP	12941		72CF AUTO THROW OVER SCHEME	ACHARYA		05-May-93				X	08-Apr-93
EDP	13064		ACCESS PLATFORM TO HVAC	ABDALLAH		28-May-93				X	10-Apr-93
EDP	13066		HDP ROOM ACCESSIBILITY PLATFORMS	SAHINER		02-Mar-93				X	02-Mar-93
EDP	13070		RECIRC MG SET INSPECTION PLATFORM	HSU		25-Feb-93				X	02-Mar-93
EDP	13092		REPL CABLES 201310B-1P AND 201311B-1C- EQ AGING	FRANCIS		11-Aug-93				X	31-Aug-93
EDP	13268		EFCW PUMP CASING VENT VALVES ASME CODE DEV.	GOLDSBY		27-Apr-93		DER 92-0252		X	13-Apr-93
EDP	13201		REMOVE COVER ON T50 PANEL	KHAN		27-Apr-94				X	27-Apr-94

DOC TYPE	DOC #	R E V	DESCRIPTION	MOD OWNER	A / E	TARGET ISSUE DATE	F-CAST ISSUE DATE	COMMENT/REFERENCE	SCHED. IMPLEM. DATE	ON OUT LST	DATE ISSUED BY P.E.
EDP	13298		RWCU HOLDING PUMP DISCHARGE VALVE REPLACE.	WILGER		17-May-94			15-Jun-94	X	19-May-94
EDP	13368		SDV DRAIN LINE	MELITO		09-Dec-92				X	24-Feb-93
EDP	13393		REMOVE FLANGE IN RHR TEST LINE	WILLIAMS		21-Jun-94			27-Jun-94	X	23-Jun-94
EDP	13576		CONTROL LOGIC CHANGE FOR E21F015A&B	FERGUSON		26-May-94				X	25-May-94
EDP	13605		RWCU ROOM JIB CRANES	BURG		19-Apr-94				X	19-Apr-94
EDP	13623		CHANGE LOGIC TO OPEN/CLOSE - E4150F008	BYRD		03-Nov-93				X	17-Nov-93
EDP	13653		FEED HEATERS (3,4,5) FANS ACCESS PLATFORM	BRYER		30-Jul-93				X	28-Jul-93
EDP	13658		TORUS VALVE (E4150 F021/22) ACCESS PLATFORMS	BURG		31-Aug-93				X	31-Aug-93
EDP	13667		COMPLETE DW SNUBBER REMOVAL PHASE 2	WILLIAMS		07-Sep-93		EOC 93-0010		X	10-Sep-93
EDP	13672		ISOLATE AIR FOR (12-14) SRV ACCUM CHECK VALVES	TASSELL		07-Sep-93		EOC 93-0002		X	08-Sep-93
EDP	13677		REPLACEMENT OF TESTABLE CHECK VLV POS SWS	FERGUSON		07-Sep-93				X	08-Sep-93
EDP	13679		REPLACEMENT OF POS IND PROB CONNECTORS	RICHARDS		19-Jan-94				X	28-Jan-94
EDP	13687		EECW DRYWELL MANUAL ISOLATION VALVE	MUDAR		07-Sep-93				X	08-Sep-93
EDP	13714		REROUTE DRYER SEPARATOR PIT DRAIN LINE	GRIMES		N/A				X	27-Dec-93
EDP	13724		REHEATER STEAM PRESSURE CONTROL VALVES	MUDAR		25-May-93				X	07-Jun-93
EDP	13727		REMOV DAMPER T4100F208 STM TUNL / CHG ACTUATOR	JAX		06-Apr-93		DER 92-0633		X	08-Apr-93
EDP	13734		COLD REHEAT HANGER	WILLIAMS		10-Dec-93				X	28-Jan-94
EDP	13751		RX WATER LEVEL INSTRUMENTATION	KLEMPNER		08-Sep-93		EOC 93-0011		X	23-Sep-93
EDP	13764		BELLOWS REDESIGN FOR NO 3 EXT. STEAM LINE	WILLIAMS		03-Jan-94				X	13-Jan-94
EDP	13787		RELOCATE G33F001 TS BYPASS L/S CONTACT	BRENNI		01-Sep-93				X	31-Aug-93
EDP	13795		REMOVE UNDER VESSEL ROOM INTERFERENCES	BLACHA		01-Mar-94				X	03-Mar-94
EDP	13818		TURBINE CONTROL VALVE MODIFICATION	TASSELL		05-Apr-94				X	06-Apr-94
EDP	13850		CHANGE FUSE TYPE IN CKT 31	KONJA		23-Mar-93				X	17-Mar-93
EDP	13921		ADHRS - RHR CROSS TIE MODIFICATION	MELITO		02-Nov-93				X	16-Mar-94
EDP	13922		ADHRS - BRANCH CONN TO RHR PUMPS	MELITO		06-Oct-93				X	16-Mar-94
EDP	13924		RHR CROSS-TIE PIPING	MELITO	S&L	30-Jun-94	17-Jun-94		24-Jun-94	X	17-Jun-94
EDP	13972		ADHRS - ELECTRICAL MODS	KONJA		01-Feb-94				X	02-Feb-94
EDP	13977		EXTEND HPCI INJECTION VENT LINE	SAHNER		15-Mar-94				X	23-Mar-94
EDP	13978		REMOVE INSULATION FROM HPCI INJECTION LINE	JAX		14-Mar-94				X	16-Apr-94
EDP	13993		RHR CR 2820 TIME DELAY RELAY REPLACEMENT	KHAN		22-Dec-93				X	28-Dec-93
EDP	13996		EDG START AIR PRESSURE CONTROL SCHEME	ANDERSON		15-Dec-93				X	08-Feb-94

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EDP	14015		INSTALL PLATFORM UNDER HP TURBINE	SAHNER		30-Mar-94				X	26-Apr-94
EDP	14022		CHANGE FUSE TYPE	KONJA		03-Aug-93				X	28-Jul-93
EDP	14039		FEED WATER HEATER PRESSURE RELIEF VALVE	WILGER		04-Mar-94				X	07-Mar-94
EDP	14087		MS SNUBBER REPLACEMENT	HSU		04-Mar-94				X	26-Jan-94
EDP	14099		REMOVAL OF REMAINING THERMO-LAG BARRIERS	KILROY		12-Apr-94				X	19-Apr-94
EDP	14125		ADD RHR & CS FLOW METER FOR SURVEILLANCES	SHARMA		19-Jan-94				X	13-Apr-94
EDP	26000		DIV 2 EECW MAKE UP TANK LEVEL REFERENCE LEG	AMIN	S&L	22-Jun-94			27-Jun-94	X	22-Jun-94
TSR	26013		# 2/3 RECIRC LIMITER SPC FOR STABILITY	KLEMPNER		17-Feb-94				X	14-Apr-94
EDP	26025		HPCI INPUT SUCTION TRANSFER TO TORUS	HAUPT		02-Feb-94				X	21-Feb-94
EDP	26039		RHR PUMP SWITCH SEAL-IN	SHARMA		23-Feb-94	26-Apr-94			X	20-May-94
TSR	26049 B		HDP SEAL & BASEPLATE MODIFICATION	NG		24-May-94			30-Jun-94	X	25-May-94
EDP	26171		SNUBBER REDUCTION -RPV DRYWELL	BURR		24-May-94			08-Jun-94	X	25-May-94
EDP	26256		OSSF HVAC FIRE DETECTION MOD	McDONOUGH	S&L	31-May-94	20-May-94		01-Jul-94	X	02-Jun-94
EDP	26257		REMOVE SAND FROM SAND CUSHION DRAIN LINE	BUCK		10-Mar-94				X	16-Mar-94
EDP	26265		RB HVAC FIRE DETECTION MOD	McDONOUGH	S&L	14-Jun-94	08-Jul-94		20-Jul-94	X	08-Jul-94
EDP	26271		MODIFY PENETRATION IN OUTAGE BUILDING	BUCK		12-Apr-94				X	14-Apr-94
EDP	26276		RBHVAC INLET DAMPER ACTUATOR REPLACEMENT	DEFIBAUGH		28-Jun-94			13-Jul-94	X	29-Jun-94
EDP	26310		ADD MOV G33F220	PATEL	S&L	29-Jul-94		PART 1 ISSUED	17-Jun-94	X	06-Jul-94
EDP	26315		REPLACE G11 FLOW INDICATOR XMITTER	AMIN		06-Apr-94				X	06-Apr-94
EDP	26322		CCHVAC TEMP SWITCH REPLACEMENT	SAQUETON		23-Mar-94				X	23-Mar-94
EDP	26328		GUARD RAIL FOR RACKS H2100P004 & 5	BURG		13-May-94				X	13-May-94
EDP	26331		RINGWATER PUMP MECHANICAL SEAL AND FILL LINE	BLACHA	S&L	01-Jul-94	26-Jul-94	INCLUDES TSR 26325	28-Jul-94	X	13-Jul-94
EDP	26352		REPLACE LPRM CABLES AND CONNECTORS	WOLFE	S&L	25-May-94	07-Jun-94		10-Jun-94	X	09-Jun-94
EDP	26362		RELOCATE CHECK VALVE N2100F078	WILGER	S&L	22-Jun-94			08-Jul-94	X	23-Jun-94
TSR	26365		CONDENSER WB PLATE GRIND & HANDRAIL	ABDALLAH	S&L	17-May-94				X	19-May-94
EDP	26375		E11F015A PRESSURE LOCK MOD	BLACHA	S&L	01-Jun-94	24-May-94		04-Jun-94	X	27-May-94
EDP	26376		E21F005A PRESSURE LOCK MOD	BLACHA	S&L	01-Jun-94			06-Jun-94	X	27-May-94
TSR	26395		REHEATER SEAL TANK LEVEL TRANS SUPPORT MOD	NG		27-May-94			16-Jun-94	X	26-May-94
TSR	26396		FLASH TANK MANWAY COVER MOD	TEMPLE		01-Jul-94	20-Jul-94		17-Aug-94	X	20-Jul-94
TSR	26397		HDP SUCTION PIPE LOW POINT DRAIN	WILLIAMS	S&L	11-Jul-94	19-Jul-94		25-Jul-94	X	15-Jul-94
EDP	26398		CONDENSATE HIGH POINT VENT REROUTE TO FLOOR	WILLIAMS	S&L	11-Jul-94			25-Jul-94	X	14-Jul-94

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EDP	26405		MANUAL BYPASS GSW TCV'S FOR TBCCW & RBCCW	MUDAR		TBS				X	21-Mar-94
TSR	26400		TURBINE BUILDING LADDERS/PLATFORMS	ABDALLAH		27-May-94			13-Jun-94	X	24-May-94
EDP	26435		DW COOLER FLANGE MOD	JAX		03-May-94	10-May-94			X	11-May-94
TSR	26442		TB HVAC SET POINT CHANGE	SAQUETON		15-Apr-94				X	15-Apr-94
EDP	26452		REVISE SCHEME FOR CONDENSATE MIN FLOW VALVE	SAQUETON		29-Jun-94	01-Jul-94		16-Jul-94	X	01-Jul-94
TSR	26484		BECKMAN CONDUCTIVITY CELL REPLACEMENT	AMIN		15-Jun-94			25-Jul-94	X	15-Jun-94
EDP	26510		ADD ISOLATION VALVES FOR RB SUMP PUMP	BURR		05-Jul-94	15-Jul-94		19-Jul-94	X	18-Jul-94
EDP	26515		PERMANENT REMOVAL OF SEISMIC RESTRAINTS	WILLIAMS		24-May-94			01-Jun-94	X	24-May-94
EDP	26520		REMOVE CHECK VALVE E41F046	DROTAR		14-Jun-94			TBS	X	15-Jun-94
EDP	26523		RFP SEAL WATER SYSTEM MODIFICATION	PELUSO		08-Jul-94			28-Jul-94	X	13-Jul-94
TSR	26565		TURBINE BEARING BEAM REPAIRS	SAHINER		06-Jun-94	13-Jun-94		TBS	X	14-Jun-94
TSR	26567		CONDENSER STRUCTURAL REPAIRS	SAHINER		20-Jun-94			06-Jun-94	X	20-Jun-94
TSR	26566		TUBINE (LP3) STRUCTURAL REPAIRS	SAHINER		13-Jun-94			31-May-94	X	14-Jun-94
TSR	26577		TBHVAC EXHAUST FAN MISSILE PROTECTION	ABDALLAH	S&L	02-Jun-94				X	02-Jun-94
EDP	26593		RBHVAC DUCT ACCESS MODIFICATION	JAX	S&L	22-Jun-93					22-Jun-94
EDP	26605		REMOVAL OF SNUBBER T23-2837-53-G34	WILLIAMS		19-Jul-94			26-Jul-94	X	20-Jul-94
TSR	26610		INSTALLATION OF NEW 480V DIST. CABINET ON TB3	PIFER		20-Jun-94	05-Jul-94		26-Jul-94	X	05-Jul-94
EDP	26614		RPL 18 EXP JNTS ON HEATER 1&2 EXTRACTION PIPING	WILLIAMS		11-Jul-94			18-Jul-94	X	08-Jul-94
TSR	26640		MOD SEAT RING ON HFP MIN FLOW BYPASS VLV	DROTAR		13-Jun-94		ADDED 6/21/94		X	13-Jun-94
EDP	26662		EDG AIR RECEIVER DRN VALVE REPLACEMENT	ANDERSON		28-Jun-94			28-Jun-94		29-Jun-94
EDP	26710		REPLACE TWMS VALVE G5100F607	WILGER		22-Jun-94		ADDED 6/22/94			22-Jun-94
EDP	26718		NEW SOFTSEAT FOR C4100F006	GRIMES		08-Jul-94		ADDED JULY 8	TBS	X	08-Jul-94

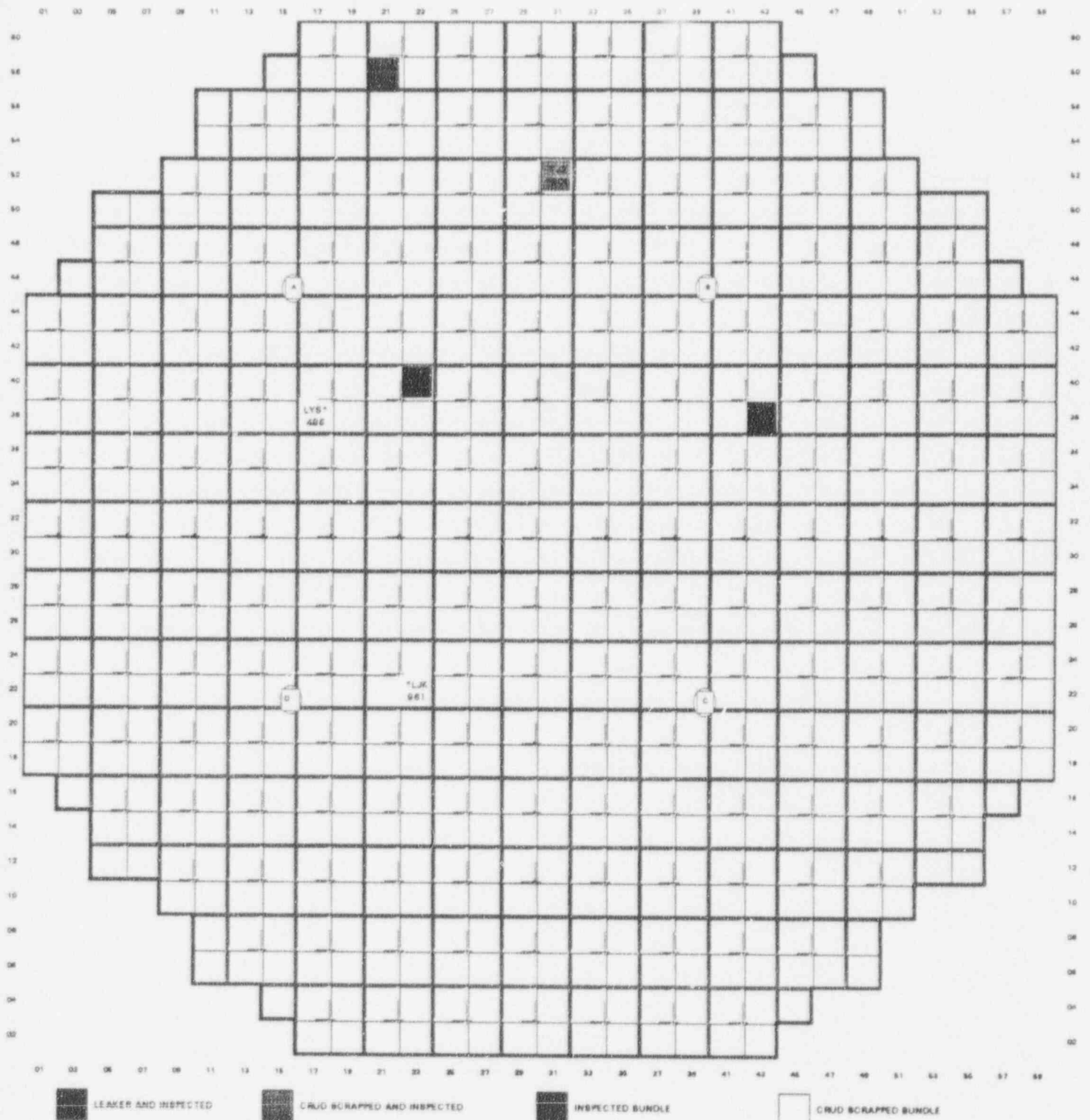
114 TOTAL RF04 COMPLETE

111

ATTACHMENT 4

FERMI 2 Failed and Inspected Bundles

Bob Newmark



NOTE: Bundles LJK962 and LJK961 are from Cycle 3. LJK962 was the Cycle 3 Leaker.

ATTACHMENT 5

NUCLEAR GENERATION MEMORANDUM

Date: August 5, 1994
TMPE-94-0465

File 0801.21

To: File

From: *for* R. A. Bryer *[Signature]*

Ref.: Edison File T1-3680

Subject: Fermi 2 Turbine Failure - Post Event Earthquake
Instrumentation Data Evaluation

Hopper and Associates letter HA-02/94-775 dated February 4, 1994, submitted a report titled "Fermi 2 Turbine Failure Post Event Earthquake Instrumentation Data Evaluation ." This report was based on data from the passive sensors and digitized time history record taken from the active sensors magnetic tape.

Subsequent waterfall plots of the recorded signals from the active sensor data by Detroit Edison Technical and Engineering Services personnel has determined that the spikes on the active data records are recorder startup spikes and are not ground motion. The active recorders were designed to record ground acceleration initiated by an earthquake exceeding .01g acceleration. The recorder has 0.01 second lag time from initial shock to data recording. The instrument, therefore, will not record the initial shock impulse but will record subsequent accelerations for the duration of the earthquake.

Hopper and Associates was, therefore, asked to prepare a report based on passive sensor data only. The passive instruments are peak shock recorders that measure any displacement the recorder is subjected to. This new report transmitted via Hopper and Associates letter HA-08/94-0841 dated August 5, 1994, supersedes the report received February 4, 1994 (Edison File T1-3680). The conclusions in the report have not changed.

Noted by: *K. E. Howard*
K. E. Howard, Supervisor, Mech/Civil

RAB/psl

cc: with reports
A. M. Alchalabi
A. J. Banek
J. E. Conen
L. S. Loveland
D. P. Mesaros
R. A. Newkirk
J. G. Walker
ETS
PE File
LER 93-14 File

HOPPER AND ASSOCIATES
ENGINEERS

300 Vista Del Mar
Redondo Beach, CA 90277
(310) 373-5573
FAX: (310) 791-7308

August 5, 1994
HA-08/94-0841

Detroit Edison Company
Enrico Fermi 2 Job Site
6400 North Dixie Highway
Newport, MI 48166

Attention: Mr. Bob Bryer, Senior Engineer

Subject: Fermi 2 Turbine Failure - Post Event Earthquake Passive Instrumentation Data Evaluation

Reference: Letter from K.E. Howard to David Hopper TMPE-94-0389 File 0801.21, Fermi 2 Turbine Failure - Post Event Earthquake Instrumentation Data Evaluation; June 27, 1994

Gentlemen:

As you requested, we have completed the subject and enclose a report elucidating our work. The turbine failure at Fermi 2 on December 25, 1993 should not be compared with a tectonic earthquake, and globally, the Reactor/Auxiliary building did not experience OBE excitation levels. Please allow this letter to summarize our findings and observations.

The seismic event alarm in the Fermi 2 Reactor/Auxiliary Building adjacent to the Turbine Generator Building was activated during the December 25, 1993, Turbine Failure Event by an excitation having an acceleration amplitude exceeding the 0.01g instrumentation trigger activation level. This event was also recorded on the sub-basement passive triaxial earthquake recording devices but not on the other passive triaxial earthquake recording devices mounted in the Reactor/Auxiliary Building at various locations between the sub-basement and the fifth floor. These devices show that surface tremors passed through the Reactor/Auxiliary Building foundation without globally exciting the structure as a tectonic earthquake event would have.

Although the data indicate that the Reactor/Auxiliary Building did not experience any significant dynamic excitation, the impulsive waves passing through the foundation occasioned localized safe shutdown earthquake exceedence indications in the foundation instrumentation as would be anticipated. For this reason, the post event earthquake instrumentation data was evaluated in accordance with those provisions established as though there had been an earthquake.

HOPPER AND ASSOCIATES
ENGINEERS

The enclosed report describes data reduction, analysis, and interpretation from the passive earthquake instrumentation. Also, the satisfactory performance of all Reactor/Auxiliary Building systems and components during and after the event and acceptable inspection of the structures after the event are documented.

If questions arise, please contact the undersigned.

Very truly yours,

Philip N. Hasrouni

Philip N. Hasrouni
Professional Engineer

Enclosure