



CHARLES CENTER • P. O. BOX 1475 • BALTIMORE, MARYLAND 21203

April 13, 1982

ARTHUR E. LUNDVALL, JR.
VICE PRESIDENT
SUPPLY

Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attn: Mr. R. A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Subject: Calvert Cliffs Nuclear Power Plant
Unit No. 1, Docket No. 50-317
TMI Action Plan Items II.K.3.2 & II.K.3.17

Reference: Letter from R. A. Clark to A. E. Lundvall, Jr.,
dated January 20, 1982, same subject.

Gentlemen:

The referenced letter requested information on emergency core cooling system (ECCS) unavailability. The attachments to this letter are provided in response. Attachment 1 is a listing of equipment outages associated with Licensee Event Reports, corrective and preventive maintenance, and facility changes. Attachment 2 provides the approximate outage duration associated with surveillance testing of ECCS and ECCS-related equipment.

You also requested additional information on pilot operated relief valves. We plan to provide this by April 21, 1982.

If you have any further questions, please contact us.

Very truly yours,

cc: J. A. Biddison, Esquire
G. F. Trowbridge, Esquire
Messrs. D. H. Jaffe - NRC
R. E. Architzel - NRC

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EVENT DATE	LENGTH OF OUTAGE	COMPONENT	CAUSE	CORRECTIVE ACTION
03/16/77	12 hr	channel 2D pressurizer pressure input	lead of input resistor was partially severed	replaced resistor
03/17/77	53 hr 39 min	#12 DG ventilation fan	electric overloads for ventilation fan tripped	overload units on all DG's upgraded
04/25/77	44 hr 40 min	#12 salt water pump	discharge check valve would not open	travel stop on valve re-adjusted
05/15/77	5 hr 45 min	#12 DG	dirty main breaker contacts on fan	breaker contacts cleaned
06/01/77	11 hr 10 min	#11 DG	corrective maintenance	replaced bolts on air discharge piping and support for turbo charger
06/03/77	1 hr 45 min	#12 DG	loose fittings at inlets to cylinders #2 and #6	tightened fittings
06/17/77	1 hr 55 min	#11 DG	#6 cylinder relief valve vibrated loose and fell off	replaced relief valve
06/22/77	2 hr 28 min	#28 containment spray pump	corrective maintenance	repaired leaking cooler
07/11/77	8 hr 10 min	#11 DG	lube oil on exhaust manifold caught fire	residue from fire cleaned and fuel injector replaced
07/13/77	48 hr	#11 DG	isolation valve to jacket coolant pressure switch was shut	opened same
08/10/77	9 hr 50 min	#11 component cooling HX	corrective maintenance	repaired salt water leak
08/25/77	31 min	tri-sodium phosphate (TSP)	less than 75 ft ³ TSP in containment floor level baskets	added TSP to baskets
09/08/77	2 hr 58 min	#12 service water HX	preventive maintenance	measured internal service water leakage
09/09/77	4 hr 11 min	#11 service water HX	corrective maintenance	plugged leaking tubes

EVENT DATE	LENGTH OF OUTAGE	COMPONENT	CAUSE	CORRECTIVE ACTION
09/21/77	2 hr 40 min	#12 DG	corrective maintenance	replaced pressure switch
09/27/77	29 hr 50 min	#12 service water HX	preventive maintenance	tested for tube leaks
10/03/77	6 hr 15 min	#11 DG	corrective maintenance	repaired inlet service water control valve
10/04/77	8 hr 43 min	#12 DG	corrective maintenance	repaired inlet service water control valve
10/07/77	7 hr 25 min	#12 component cooling HX	corrective maintenance	replaced channel cover
10/10/77	4 hr 38 min	#12 DG	loose fuse holders in excitation circuitry	tightened exciter and fuse holders
11/10/77	10 min	#12 ECCS Pump Room exhaust	Facility Change Request to eliminate the necessity of manual adjustment of 480V motor control overloads due to change in ambient temp. conditions.	new ambient temp. compensating motor control overloads installed & tested per FCR Program
11/13/77	5 hr 16 min	#11 DG	fire on exhaust manifold	extinguished fire and cleaned up soot and oil
11/15/77	9 hr 33 min	#12 DG	minor lube oil, fuel oil and cooling jacket water leaks	repaired leaks
11/16/77	4 hr 25 min	#12 DG	minor fuel oil, lube oil and cooling water leaks	repaired leaks
12/19/77	40 min	#11 component cooling HX	corrective maintenance	installed new relief valve
12/20/77	7 hr 55 min	#12 component cooling HX	corrective maintenance	replaced channel cover and tested relief valve
12/28/77	1 hr 42 min	#11 DG vent fan	FCR, due to existing electrical line up D/G could be started on under-voltage or load bus without vent fan start	added agastat to circuit to start fan on all D/G starts.
01/13/78	2 hr 7 min	#11 DG	corrective maintenance	repaired fuel oil leaks

EVENT DATE	LENGTH OF OUTAGE	COMPONENT	CAUSE	CORRECTIVE ACTION
01/23/78	2 hr	#12 LPSI Pump	screw missing on circuit breaker	replaced screw
02/13/78	2 hr	SI Tanks	improper calibration procedure for level transmitters	transmitters re-calibrated
04/10/78	4 hr	#12 DG	control valve failed to open due to positioner feed back spring loose linkage.	spring bracket screw assembly and lockwasher reset and tightened
04/10/78	13 min	#12 DG	overspeed trip	restarted and tested
04/11/78	10 hr 35 min	#11 4KV bus	power lost due to breaker not closing	breaker manually closed
04/13/78	50 min	#11 DG	start/failure alarm	started DG
04/17/78	1 hr 35 min	ESFAS channel ZD	reading 0 volts	re-energized cabinet ZD
05/30/78	3 hr 52 min	#11 salt water pump	leak on header at pressure gauge connection	repaired leak
06/04/78	4 hr	#11 DG	fire on exhaust manifold	fire extinguished, tested and restarted
07/02/78	10 hr	#11 DG	dripping oil, caught fire	extinguished fire and removed oil in exhaust line
07/08/78	58 min	SIAS logic module B-8	logic module failed	replaced module
09/24/78	23 min	LPSI Pumps	RAS actuated	borated water from SFP transferred to RWT to reset RAS
12/18/78	21 min	#11 DG	"B" phase overload tripped	overload reset and tested
02/16/79	1 hr	#11 salt water pump	discharge check valve failed to open	removed debris lodged against disc in valve

EVENT DATE	LENGTH OF OUTAGE	COMPONENT	CAUSE	CORRECTIVE ACTION
03/17/79	2 hr 40 min	#11 service water HX salt water outlet isolation valve	valve would not stroke full open	valve open; repaired during next outage
03/21/79	1 hr 42 min	ECCS Pump Room ex- haust fan	airline tubing not fitted properly	airline re-connected
04/11/79	< 1 hr	aux HPSI hdr stop valve	violated TS requirements for time to open	operating instructions revised to maintain valve open in Modes 1-3
05/03/79	13 days 7 hours	#12 containment spray header	only 89 spray nozzles present; FSAR requires 90	as-built spray header exceeds de- sign system flow rate - no cor- rective action necessary
05/07/79	15 min	LPSI Pump	spurious recirculation actuation signal caused by voltage transient	RAS reset and shutdown cooling restored
05/15/79	54 hr 9 min	#12 DG	blower failure	repaired blower
06/15/79	4 hr 20 min	#12 DG	corrective maintenance	repaired jacket cooling leaks on #12 cylinder
07/24/79	< 72 hr	#11 DG	grounded primary winding in gener- ator exciter potential transformer	replaced transformer
07/31/79	9 hr	ESFAS A-4 logic	over-voltage protection circuit actuation point out of calibration	adjusted actuation point
08/23/79	1 hr 35 min	aux HPSI hdr valve	corrective maintenance	closed valve to work on charging header
08/28/79	24 hr	1 ECCS and 1 contain- ment spray system	valves improperly positioned	valves repositioned and color sig- nal system installed to aid opera- tors in verifying positions
09/14/79	8 hr 48 min	#12 HPSI header	corrective maintenance	repaired weld on reducer for sample line pipe
09/14/79	40 min	#11 & #12 DG air start hdrs	air start hdrs not supported by seismic restraints	installed seismic restraints
09/24/79	30 min	#13 service water pump	would not start on SIAS A-7 signal	reset phase overloads

EVENT DATE	LENGTH OF OUTAGE	COMPONENT	CAUSE	CORRECTIVE ACTION
09/24/79	30 min	aux high pressure loop isolation valve	failed to open on SIAS A-1 signal	re-aligned valve contact and tested
09/28/79	6 hr 30 min	#11 shutdown cooling HX	actuator vane arm failed	new vane arm installed
09/29/79	14 hr 10 min	#11 component cooling HX salt water outlet line	corrective maintenance	carbon steel cap replaced with red brass or bronze cap as required by piping class
10/01/79	4 hr 35 min	#11 DG	calibrating series resistor out of tolerance	replaced resistor
10/18/79	1 hr 45 min	#11 DG	corrective maintenance	changed set point
10/18/79	54 min	#12 DG	corrective maintenance	changed set point
10/20/79	47 hr 40 min	#12 DG	clogged injectors	cleaned and re-adjusted injectors
11/13/79	2 hr 47 min	#12 DG	sludge deposits on governor assembly	cleaned governor
11/20/79	35 min	#12 containment cooling fan	preventive maintenance	adjusted spring tension on controller handswitch
11/27/79	1 hr 20 min	#12 DG	preventive maintenance	replaced automatic vent valve on service water return line
11/27/79	7 hr 15 min	#11 DG	corrective maintenance	repaired fuel line leaks
12/04/79	1 hr 47 min	#11 DG	breaker auxiliary switch binding	replaced switch
12/05/79	8 hr 25 min	#11 component cooling HX	corrective maintenance	repaired valve
12/10/79	5 hr 10 min	#11 salt water hdr valve	corrective maintenance	repaired #11 ECCS Pump Room air cooler relief valve

EVENT DATE	LENGTH OF OUTAGE	COMPONENT	CAUSE	CORRECTIVE ACTION
12/04/79	5 hr	#12 DG	corrective maintenance	repaired fuel oil leaks
12/04/79	1 hr 47 min	#11 DG	repairs on output breaker & investigated problem with "sequence initiate" alarm	replaced breaker auxiliary switch
01/04/80	4 hr	#12A HPSI loop stop	loose terminal on one of the electrical leads	tightened terminal screw
02/02/80	15 min	#11, #12, #21 DG	SIAS failed to fully reset before diesels were stopped causing a start failure alarm	alarm reset & diesels tested
03/17/80	4 min	channel ZE sensor cabinet	corrective maintenance	replaced defective isolation module
05/06/80	27 hr	#12 containment spray pump	maintenance taken out of service to uncouple pump from motor	pump motor vibration readings taken to establish baseline vibration data. Pump recoupled to motor & returned to service
05/07/80	1 hr	#12 DG	maintenance, time to reach rated voltage greater than Tech. Spec. limit	repaired, checked and tested speed switch circuit
05/15/80	5 hr 55 min	#12 DG	open circuit of speed switch caused starting circuit to time out initiating starting failure	repaired switch
05/20/80	2 hr 27 min	#11 service water system	service water system became air bound	design change submitted to install continuous air vents with alarm function
05/20/80	3 hr 55 min	#12 service water system	service water system became air bound	design change submitted to install continuous air vents with alarm function
06/27/80	4 hr 10 min	#12 DG	preventive maintenance	cleaned under diesel
06/29/80	5 hr 5 min	#11 DG	crankcase pressure alarm circuit failure	diesel remained operable, alarm annunciator circuit was repaired and returned to service
07/01/80	19 hr 45 min	salt water valve #5212	salt water valve failed to open fully	cleaned valve actuator and ordered parts
07/02/80	6 hr 35 min	#14 containment cooler	cooler would not shift speed to slow	cleaned relay

EVENT DATE	LENGTH OF OUTAGE	COMPONENT	CAUSE	CORRECTIVE ACTION
07/15/80	4 hr 15 min	#12 DG	corrective maintenance	replaced broken bolt on governor fuel pump drive housing & replaced 3 missing grease fittings on turbo charger damper linkage
12/09/80	3 hr 9 min	#12 DG	oil leak on line to injector	removed and replaced line
07/21/80	31 min	#11 DG	no voltage or speed control	replaced transformer and voltage regulator
07/30/80	2 hr 35 min	#11, #12 DG	seismic tubing required	revised seismic design
08/06/80	1 hr	ESFAS channel ZE	corrective maintenance	deenergized for trouble shooting
08/06/80	10 min	#11 service water HX outlet valve	valve opened for no apparent reason causing #11 SW hdr to decrease by 3 PSIG	rebuilt solenoid valve
09/01/80	55 min	#12A SI tank	tank level increased from 199" to 245"	reduced tank level
09/17/80	6 hr 45 min	#12 service water HX	tube leak	plugged tube
09/19/80	6 hr 45 min	#12 DG	corrective maintenance	repaired oil leaks
09/23/80	3 hr 5 min	#12 DG	corrective maintenance	repaired oil leaks
09/25/80	40 min	channel ZD pressurizer pressure	defective E/E module	replaced module
10/25/80	6 hr 25 min	#11 salt water system	corrective maintenance	repaired relief valve on outlet of 11 CC HX salt water side
11/12/80	10 min	#11 4KV bus feeder breaker	breaker spuriously opened causing loss of shutdown cooling flow	cause unknown; no corrective action
12/25/80	32 hr 40 min	#11 component cooling HX outlet valve	outlet throttle valve would not open	repaired valve

EVENT DATE	LENGTH OF OUTAGE	COMPONENT	CAUSE	CORRECTIVE ACTION
01/04/81	86 hr	SI pumps recirculation valves	two valves would not open when CR HS actuated	none; valves required to be operational only in modes 1-4
01/12/81	55 min	ESFAS Channel ZE	corrective maintenance	corrected erroneous sensor input
01/13/81	3 hr	#12 DG	switchgear would not close in on #21 4KV bus	reinserted switchgear & cleared high resistance at secondary disconnect
01/19/81	16 hr 25 min	#14 containment cooler	service water discharge valve failed to open	replaced solenoid valve
01/23/81	31 hr 40 min	salt water, service water & component cooling systems	broken nipple on valve	isolated valve & repaired nipple
01/27/81	4 hr 45 min	#12 DG	fire on lagging around exhaust pipe	fire extinguished, lagging removed & inspected underneath DG
02/17/81	3 hr 40 min	ESFAS Channel ZD	E/E isolation out of specs	replaced E/E module
01/08/81	3 hr 9 min	#12 DG	DG stopped and start failure alarm received	reset control relays
09/14/79	68 hr 25 min	#12 Cnmnt Spray pump	motor stator coil chafed against incoming phase lead	leads tested and returned to service
06/01/77	2 hr 30 min	#12 DG	failed to test and align AC power sources within TS limit of 1hr	Reactor power reduced per TS and AC sources were verified

EVENT DATE	LENGTH OF OUTAGE	COMPONENT	CAUSE	CORRECTIVE ACTION
02/22/77	11 hr 40 min	#21 DG	failed to start & assume rated speed within required time; cause undetermined	started after re-assembly of air start system
03/08/77	approximately 5 hours	#21 DG	breaker tripped (operator error)	started #12 DG
03/22/77	13 hr 36 min	#21 DG	leak on service water inlet valve causing low jacket cooling water	repaired leak
04/13/77	2 hr 25 min	#22 containment air cooler	dirty contacts in auxiliary switch assembly	replaced auxiliary switch assembly
05/11/77	159 hr 39 min	#22A LPSI header valve	leak on valve	repaired leak
05/18/77	< 1 hr	#21 HPSI Pump	shutter over breaker cranking mechanism not fully shut preventing breaker from closing	23 HPSI pump aligned for backup operation. Shut breaker, shutter and pump tested.
06/13/77	96 hr	#21 salt water HX	leak due to corrosion of outlet control valve	repaired leak
06/21/77	5 hr	#21 DG	minor oil leak	tightened fittings to secure leaks
07/18/77	5 hr	#21 DG	oil leak	repaired leak
08/18/77	4 hr 10 min	SIAS Channel A sensor cabinet ZG	isolation module failed	replaced isolator
08/22/77	approximately 8 hours	TSP	less than 75 ft ³ TSP in containment	added TSP
08/25/77	8 min	#21 containment spray hdr isolation valve	corrective maintenance	closed valve while replacing resistor in circuit
08/26/77	40 min	TSP	insufficient TSP (less than 75 ft ³ in containment	added TSP
08/31/77	164 day 8 hour	#21 salt water pump	corrective maintenance	repaired defective shaft bearing

EVENT DATE	LENGTH OF OUTAGE	COMPONENT	CAUSE	CORRECTIVE ACTION
09/28/77	unknown	TSP	recalculation of amount of TSP in containment required	adjusted ppm B ¹⁰ in SI & RWT tanks to limit pH to 7.0 on SIAS
11/01/77	26 hr 55 min	#21 DG	corrective maintenance	replaced 8 rings & repaired leaks on #9 & #10 water jacket relief valves
11/04/77	4 hr 20 min	ESFAS pressure transmitter	faulty module on voltage signal isolator	replaced module
11/15/77	1 hr 45 min	auxiliary high pressure header stop valve	dirty switch contacts	cleaned contacts
11/16/77	13 min	#21 ECCS Pump Room exhaust fan	preventive maintenance	replaced overload heaters
11/17/77	48 min	#22 ECCS Pump Room exhaust fan	preventive maintenance	replaced overload heaters
11/25/77	72 hr	#21 DG	corrective maintenance	repaired service water inlet control valve
12/13/77	18 hr 35 min	HPSI header	investigating/resetting relief valve	opened auxiliary HPSI header valve
01/10/78	72 hr	#21 DG	loss of field & reverse power relays tripped while main turbine was being loaded on the bus, resulting in loss of load on the D/G bus	no corrective action, this condition would not occur during accident conditions as the D/G would not be operating in parallel
01/11/78	11 hr 55 min	#21 service water HX salt water valve	valve would not open further than 5%; shut valve & could not reopen it	repaired valve
01/13/78	5 hr 35 min	#25 service water HX salt water valve	valve would not open further than 5%; shut valve and could not reopen it.	repaired valve
01/16/78	41 hr 25 min	#21 salt water header valve	corrective maintenance	repaired leak on valve
06/06/78	15 hr 27 min	#21 DG	high resistance in breaker contacts	replaced defective start relays
06/09/78	4 hr	ESFAS Channel ZF	isolation transformer non-linear	replaced isolator

EVENT DATE	LENGTH OF OUTAGE	COMPONENT	CAUSE	CORRECTIVE ACTION
06/26/78	30 min	SI Tank	tank overfilled due to change in recalibration of level transmitter	drained tank to proper level
07/11/78	approximately 2 hours	#21 DG service water inlet control valve	control valve did not open properly	#21 DG tested and restarted
08/01/78	3 hr 22 min	#21 DG	service water valve failed to open causing trip on high jacket cooling temperature	replaced valve plunger and seat
09/05/78	8 hr 30 min	#21B tank	tank level too high (operator error)	reduced tank level
09/07/78	11 hr 43 min	#21B, #22B SI Tanks	leaks of reactor coolant past SIT outlet check valves	increased boron concentration
09/24/78	20 min	SI Tank	instrument level indicator out of calibration	recalibrated level indicator
10/10/78	25 min	#21 DG	did not start on loss of 13KV bus #21 & #24 4KV bus	none; TS requires only one 4KV bus to be in operation in modes 5 & 6
10/17/78	2 hr	#21, #22 LPSI Pumps	pumps became air bound causing loss of shutdown cooling	vented pumps & restored shutdown cooling
10/17/78	17 min	LPSI Pump	stopped to avoid overflowing the reactor coolant out of the SG manways (operator error)	restored system to proper operation
11/15/78	26 min	refueling water tank	technician failed to close sample valve causing low RWT level	closed sample valve
12/13/78	50 min	#22B SI Tank	minor valve leakage causing pressure decrease	repressurized tank
12/13/78	33 min	RWT level indicator	level indicator out of calibration & RWT level low	filled RWT & calibrated instrument
02/08/79	30 min	#22B SI Tank	fill valve not shut tight; SIT level low	closed valve
02/26/79	30 min	#21 service water HX salt water outlet valve	valve failed to open	repaired valve on outage; left open & used 2-CV-5210 for throttling

EVENT DATE	LENGTH OF OUTAGE	COMPONENT	CAUSE	CORRECTIVE ACTION
03/28/79	2 hr	SI Tank Valve	valve leaking causing low SIT level	repaired leak
04/19/79	4 hr 50 min	#21 B SI Tank	level increased	lowered tank level
04/29/79	9 hr 45 min	#22A SI Tank	level increased	sampled tank & adjusted level
05/20/79	10 min	#21 DG	LSB relay remained energized due to slow response of lube oil pressure switch	auto block alarm added in Control Room to allow Operators to identify this condition
05/25/79	106 hr 45 min	#23 component cooling pump	failed to start on SIAS A7 signal during surveillance testing	repaired pump
05/25/79	19 hr 47 min	SIAS logic module B-8	logic module failed	replaced module
05/27/79	1 hr 33 min	4KV feeder breaker	lost power to #24 4KV bus caused by spurious signal	load shed signal automatically caused feeder breaker to open (no corrective action necessary)
06/02/79	20 min	#22B SI Tank	leak on fill valve causing low tank level	closed valve and refilled
06/21/79	20 min	#21 DG	valve for low pressure switch isolated causing trip on low pressure	opened valve
07/03/79	15 hr 35 min	#21 salt water system	salt water inlet valve failed	repaired valve
08/07/79	8 hr 10 min	#21, #22 containment coolers	did not meet minimum flow requirements of STP & TS	design ability meets containment cooler requirements
09/14/79	5-7 days	#21 DG	corrective maintenance	installed hangers on air start system
10/05/79	1 hr 10 min	ESFAS channel ZF	corrective maintenance	replaced containment sensor voltage meter
10/22/79	3 min	SI valve	accidental removal of pressure transmitter closing valve	re-opened valve

EVENT DATE	LENGTH OF OUTAGE	COMPONENT	CAUSE	CORRECTIVE ACTION
10/12/79	1 hr 55 min	#21 DG	defective voltage regulator	replaced voltage regulator
10/24/79	2 hr	#21 DG	corrective maintenance	analyzed seismic supports
10/27/79	27 min	#22 HPSI Pump	seal failure, loss of boration path	repaired mechanical seal & pump internals
11/27/79	4 hr 45 min	ESFAS Channel ZG pressurizer pressure transmitter	corrective maintenance	repaired conduit & corrected transmitter zero shift
10/23/79	4 hr 35 min	#21 RWT	low boron concentration	increased concentration
12/28/79	15 hr 51 min	#21 LPSI Pump	corrective maintenance	repaired SI valve
01/07/80	4 hr	indicator alarm circuit	defective equipment	replaced RWT LED indicator
01/10/80	5 hr 35 min	#21 DG	leaking gasket on jacket cooling water discharge header	repaired leak
01/25/80	4 hr 20 min	#22 containment spray header valve	packing gland leak	installed new packing
02/15/80	167 hr 30 min	#21 DG	corrective maintenance	changed injectors on #7 cylinder
02/19/80	2 hr 15 min	#22 ECCS Pump Room exhaust fan	preventive maintenance	replaced fan belts
02/20/80	2 hr 14 min	#21 containment spray header valve	corrective maintenance	repaired valve
02/25/80	7 hr 30 min	#21 LPSI Pump	corrective maintenance	maintenance crew removed wrong pump; repaired pump
02/25/80	50 hr 40 min	#21 containment spray pump	corrective maintenance	maintenance crew disassembled pump instead of LPSI pump (see above)

EVENT DATE	LENGTH OF OUTAGE	COMPONENT	CAUSE	CORRECTIVE ACTION
02/27/80	46 hr 50 min	#21 DG	slow response of DG governor	replaced governor
03/06/80	55 min	#21 DG	slow response of D/G governor	replaced governor
03/16/80	26 hr 10 min	#22 salt water service water HX	tube leak	plugged tube
03/18/80	5 hr 50 min	SIAS output relay	faulty pin in relay socket	repaired relay socket
04/16/80	3 hr 55 min	ESFAS 15 VDC power supply	overvoltage relay tripped	replaced relay
05/05/80	10 hr	#21 DG	oil leak on exhaust header caused small fire	repaired oil leak, started and ran D/G to verify operability
07/29/80	38 min	ESFAS Channel ZE	corrective maintenance	replaced ZE SIAS & ZE CIS bistables
07/30/80	1 hr 25 min	#21 DG	corrective maintenance	replaced non-seismic tubing
07/31/80	30 min	ESFAS Channel ZE	maintenance - steam generator pressure sigma required cali- bration	steam generator sigma was cali- brated and returned to service
09/14/80	23 hr 25 min	#22 B SI Tank	level indication erratic, cause unknown	level transmitter was repaired and recalibrated
09/26/80	40 min	ESFAS E/E module	signal isolator failed	replaced isolator
11/01/80	8 hr 26 min	#21 containment air cooler	terminal shorting block flashed over, cause unknown	terminal shorting block was in- spected, controllers were found to be clean, dry & all connections were found to be tight.
11/06/80	11 hr 7 min	#21 4KV bus breaker	both busses powered off 500KV red bus without performance of periodic demonstration of operability of re- maining AC sources	verified operability of #12, #21 DG & assumed all AC sources oper- able throughout event
11/06/80	11 hr 14 min	#24 4KV bus breaker	both busses powered off 500KV red bus without performance of periodic demonstration of operability of re- maining AC sources	verified operability of #12, #21 D/G & assumed all AC source oper- able throughout event

ATTACHMENT 2

Outages during Surveillance Tests - Unit 1 for period 1977 to 1981

<u>LENGTH OF OUTAGE</u>	<u>COMPONENT</u>
5 hr	#11 Component Cooling Pump
5 hr	#12 Component Cooling Pump
5 hr	#13 Component Cooling Pump
5 hr	#11 Containment Spray Pump
5 hr	#12 Containment Spray Pump
5 hr	#11 HPSI Pump
5 hr	#12 HPSI Pump
5 hr	#13 HPSI Pump
5 hr	#11 LPSI Pump
5 hr	#12 LPSI Pump
5 hr	#11 Salt Water Pump
5 hr	#12 Salt Water Pump
5 hr	#13 Salt Water Pump
5 hr	#11 Service Water Pump
5 hr	#12 Service Water Pump
5 hr	#13 Service Water Pump
288 hr	#11 Diesel Generator
288 hr	#12 Diesel Generator
16 hr	Shutdown Cooling
720 hr	ESFAS Channels (4 channels total)
1500 hr	ESFAS Instrumentation
1500 hr	SIAS Logic

ATTACHMENT 2

Outages during Surveillance Tests - Unit 2 for period 1977 to 1981

<u>LENGTH OF OUTAGE</u>	<u>COMPONENT</u>
5 hr	#21 Component Cooling Pump
5 hr	#22 Component Cooling Pump
5 hr	#23 Component Cooling Pump
5 hr	#21 Containment Spray Pump
5 hr	#22 Containment Spray Pump
5 hr	#21 HPSI Pump
5 hr	#22 HPSI Pump
5 hr	#23 HPSI Pump
5 hr	#21 LPSI Pump
5 hr	#22 LPSI Pump
5 hr	#21 Salt Water Pump
5 hr	#22 Salt Water Pump
5 hr	#23 Salt Water Pump
5 hr	#21 Service Water Pump
5 hr	#22 Service Water Pump
5 hr	#23 Service Water Pump
360 hr	#21 Diesel Generator
16 hr	Shutdown Cooling
720 hr	ESFAS Channels (4 channels total)
1500 hr	ESFAS Instrumentation
1500 hr	SIAS Logic