NRC Form 366 (9.63)	-		LICE	ENSEE EVE	NT RE	PORT	(LER)		U.S.	A	EAR RE	OMB	NO.		
FACILITY NAME (1)								DOCKE	T NUM	BER (2	)		F	PAG	E (3)
P	LANT HA	ATCH, UNIT	2					0   5	101	01	0 3 6	5 16	1	OF	1 7
TITLE (4)									TTO		101 47				
	VES DIS	SCLOSE DESI				CHNIC	A Real Property and the second second			and the same in the same		1101			
EVENT DATE (5)		LER NUMBER (6	The second second	REPORT DA			FACILITY NA	FACIL	TIES IN		DOCKET I	NUMBE	RISI		
MONTH DAY YE	EAR YEAR	NUMBER	NUMBER	MONTH DAY	YEAR	PLANT	HATCH,		1			010		3	,2,1
		1								-+	1-1	- 1	-		
d 2 1 2 8	8 8 8 8	3 d 0 7	- 011	0 7 1 1	88						0 151	0 10	010	1	1.1
OPERATING	THIS R	EPORT IS SUBMITTE	D PURSUANT T	O THE REQUIREN	ENTS OF 1	O CFR 8: 10	Check one or more	of the i	allowing	1 (11)				-	
MODE (9)	5 20	0.402(b)		20.405(c)			50,73(a)(2)(iv)				73.	71(b)			
POWER	21	0.405(s)(1)(i)		50.38(c)(1)			50.73(a)(2)(v)				73.	71(e)			
LEVEL Q O	0 21	0.405(s)(1)(ii)		50.36(c)(2)			50.73(s)(2)(vii)			-		HER IS			
	25	0.405(a)(1)/iii)	X	50.73(2)(1)			50,73(#)(2)(viii)			1	356	EA.)			
	Contraction of the second s	0.405(a)(1)()v;	X	50.73(a)(2)(ii)			62.73(a)(2)(viii)	(8)							
	51	0.405(e)(1)(v)		50,73(a)(2)(iii)			50.73(s)(2)(x)								
NAME			L	ICENSEE CONTAC	I FOR THIS	LER (12)		-		1	ELEPHO	NE NU	MBER		
								A	REA CO	DE					
J. D	). Heid	t, Nuclear	Licensi	ng Manage	r - H	atch		1	1,0	4	5 2	5 т	4	3	5 p
		COMPLETE	ONE LINE FOR	EACH COMPONEN	T FAILURI	DESCRIBE	O IN THIS REPO	RT (13)	-					-	
		N ANUFAC	REPORTABLE		CAUE	SYSTEM	COMPONENT	M	ANUFA		REPOR				
CAUSE SYSTEM (	COMPONENT	TURER	TO NPROS		CAUSE	STRIEM	COMPORENT	4	TURER	<u> </u>	TO N	PROS			
	TO	TODO	Y								1.				
BJM	TBI	G T O 20	1			1		-	1	1			-		
						1		1.							
		i l l l				I. I.		+		_	1	MONT	1	DAY	YEAR
		SUPPLEME	NTAL REPORT	EXPECTED (14)			in the second	-		ECTE		MONT	-	UAT	TEAN
YES IT YAL COM	NATA EXPECTE	D SUBMISSION DATE	1	NO						TE (15		1.0		1	1.12
ABSTRACT /Limit to 1	400 spaces, i.e.	approximately fifteen	single spece type	written lines/ (16)			disease of the same become						-	_	
supp Dryw pass not Anal valv prof and	well van well van s the Li meet a lysis Ru ves on nibited piping	Local Leak es serving cuum break LRT. An in 11 of the s eport (FSA) Units 1 and by the pla were corre ause of the	the pae ers (EII nvestiga system d R). Add d 2 were ants' Te ectly de	umatic ac S Code Bl tion dete lesign red litional not corr chnical S signed.	tuato ) in ermine quirem invest rectly Specif	rs for Unit 2 d the ents i igatic teste icatic	r testing 2. The v valves a in the Fi ons deter ed. This ons. The	the valve ind inal mine s is	e To es d the Saf ed t a c	rus id lin ety he ond	to not es d same litio	n			
		actions for Specificat								opr	iate				
defi stre	icienci	es, 3) ini ing design	tiating	a comple	te inv	estiga	ation of	the	eve	nts le f	and or t	he			

04

NRC Form 328 (9-83)

• • •

....

ENSEE EVENT REPORT (LER) TEXT C	ONTINU	OITA	N			US	APPS	ROVE	0 01	UB NO		
DOCKET NUMBER (2)			LX	ERN	UMBER	9 (6)			T		PAGE	(3)
		YEAR								-	T	
2 0 5 0 0 0	3 6 6	8 8	_	0	1 0	7	_	0	1	9	2 OF	1,7
	DOCKET NUMBER (2)	2 3 6 6	2 DOCKET NUMBER (2)	2 3 6 6 8 8	2 2 000KET NUMBER (2) LER N VEAR SEC	2 CENSEE EVENT REPORT (LER) TEXT CONTINUATION	2 2 2 3 6 6 8 8 0 0 7	2 DOCKET NUMBER (2) LER NUMBER (8)	2 CENSEE EVENT REPORT (LER) TEXT CONTINUATION APPROVE EXPIRES 1 DOCKET NUMBER (2) LER NUMBER (8) VEAR SEQUENTIAL REVIS VEAR SEQUENTIAL REVIS NUMBER 2 0 0 7 0	2 CENSEE EVENT REPORT (LER) TEXT CONTINUATION APPROVED ON EXPIRES 8/31/ DOCKET NUMBER (2) LER NUMBER (6) VEAR SEQUENTIAL REVISION NUMBER 2 3 6 6 8 8 0 0 7 0 1	2 CENSEE EVENT REPORT (LER) TEXT CONTINUATION APPROVED OMB NO EXPIRES B/31/88 DOCKET NUMBER (2) LER NUMBER (6) VEAR SEQUENTIAL REVISION NUMBER 2 3 6 6 8 8 0 0 7 0 1 0	2 2 2 3 6 6 8 8 0 0 7 0 1 0 2

## A. REQUIREMENT FOR REPORT

1 . 1 . 1

This report is required per 10 CFR 50.73 (a)(2)(ii), because some of the small (half inch to inch) diameter air lines (that are used for testing of the Unit 2 torus to drywell vacuum breakers [EIIS Code BF]) did not meet all of the design requirements of the Final Safety Analysis Report (FSAR). This is a condition that is cutside of the design basis for these lines.

In the course of the investigation for the preceding Unit 2 event. it was determined that this report is also required per 10 CFR 50.73 (a)(2)(i), because conditions existed on Units 1 and 2 that were prohibited by the plants' Technical Specifications. Specifically, Table 3.7-4 of the Unit 1 Technic 1 Specifications allows Local Leak Rate Tests (LLRTs) not to be performed in the direction required for isolation, provided that this testing is equivalent to, or more conservative than, testing in the accident direction. For Unit 2, Section 4.6.1.2 of the Technica! Specifications requires that containment leakage shall be determined in accordance with the criteria specified in Appendix J of 10 CFR 50. Appendix J section III C again requires that the results, from the tests for pressure applied in a different direction, will provide equivalent or more conservative results. It was determined that the test direction for the Units 1 and 2 solenoid isolation valves would not result in a conservative test.

### B. UNIT(s) STATUS AT TIME OF EVENT

### 1. Power Level/Operating Mode

Unit 2 was a in cold shutdown condition at an approximate power level of 0 MWt (approximately 0% rated power). The reactor mode switch was in the refuel position. The reactor vessel head was removed for the seventh refueling outage and there was no fuel in the vessel.

Unit 1 was in steady state operation at an approximate power level of 2436 MWt (approximately 100% thermal rated power). The reactor mode switch was in the run position.

NRC FORM 3684

NRC Form 366A (9-83) LICENSEE EVEN	T REPORT (LER) TEXT CONTIN		ULATORY COMMISSION M8 NO 3150-0104 /88
FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)	PAGE (3)
		YEAR SEQUENTIAL REVISION NUMBER NUMBER	
FLANT HATCH, UNIT 2	0 5 0 0 0 3 6	6 8 8 - 0 0 7 - 0 1	Q 3 OF 117
TEXT (If more space is required, use additional NRC Form 3864's) (17)			
2. Inoperable Equ	ipment		

There was no inoperable equipment that contributed to this event.

## C. DESCRIPTION OF EVENT

1. Event

C & 2 + 1

On 2/12/88 at approximately 0900 CST, non-licensed maintenance personnel began the Local Leak Rate Test (LLFT) of Unit 2 solenoid isolation valves (2T48-F342A through L) (EIIS Code JM) on the air lines serving the pneumatic vacuum breaker actuators (2T48-F323A through L) (EIIS Code JM) for testing the Torus to Drywell vacuum breakers (EIIS Code BF). The configuration of one of the lines is presented as figure 1. This system is considered a closed system (GDC-57). Therefore, the pneumatic actuator is the inboard isolation barrier and the two way solenoid valve is the outboard isolation barrier.

The testing was per plant procedure 42SV-TET-001-2S (Primary Containment Periodic Type B and Type C Leakage Tests). Prior to 2/12/88, the valves had been tested in a direction that was opposite to the accident direction. Plant personnel believed this method satisfied Technical Specification requirements since it was expected to yield conservative results based on the understood design configuration. However, with Revision 3 to the procedure (dated 1/13/88) the valves were now tested in the accident direction. This revision had resulted from the implementation of some Architect/Engineer (A/E - Southern Company Services) recommendations to enhance the LLRT program.

Between 0900 and 1400 CST, two solenoid valves in two separate lines failed to hold the required test pressure. At 1400 CST, plant engineering personnel were requested to aid in determining the reason for the failures. At that point, it was suspected that the valves might be open because of a logic problem.  

 NRC F6rm 386A (9.83)
 U.S. NUCLEAR REGULATORY COMMISSION APPROVED 0M8 NO. 3150-0104 EXPIRES: 8/31/88

 FACILITY NAME (1)
 DOCKET NUMBER (2)
 LER NUMBER (6)
 PAGE (3)

									YE	AR	58 Q	UNBER	-	RN	UMBER					
PLANT HATCH, UNIT 2	0	5	0	0	0	3	6	6	8	8	 0	0,7		-	0,1	0	4	OF	1	7

Between 1400 and 1545 CST, plant engineering personnel reviewed the logic channel design drawings, Piping and Instrument Drawings (P&IDs), and valve vendor manuals. The review indicated that the valves were installed according to logical construction practices (i.e. valve flow direction identical to plant air test flow direction). However, upon closer examination, plant engineering personnel started to question if this installation was adequate.

Engineering personnel determined that when the valves were previously tested in the reverse direction, the test pressure would tend to drive the valves onto the valve seats. This would tend to decrease any leakage that would a present. When the valves were now tested in the accident direction, the test pressure appeared to lift the valve off of its seat. See figure 2 for valve details.

At 2/12/88 at 1545 CST, plant engineering personnel contacted representatives of the A/E (Bechtel Eastern Power Corporation - BEPC) to determine whether the valves, as currently installed, could accomplish their design function. The scope of the request covered both Units 1 and 2, since the valve installation on Unit 1 is similar to Unit 2, although the valves are different models (Target Rock models 73K-001 for Unit 1 and 75F-009 for Unit 2). It was determined the Unit 1 valves were installed according to logical construction practices.

After discussion with the valve vendor, the BEPC personnel contacted plant engineering personnel at 1900 CST and stated that both Unit 1 and Unit 2 valv would remain closed only when the pressure was less than approximately 2 to 5 psig. Since the accident pressure in the torus, as presented in the FSAR, is approximately 28 psig for Unit 1 and 26 psig for Unit 2, plant engineering ard A/E personnel determined the valves potentially would not perform their design function of containment isolation.

Based on this information it was concluded that the original design was deficient. To accomplish their design function of retaining accident pressure and thereby preserving containment integrity, the valves should have either been installed in a direction reverse to which they were actually installed, or the valves should have been installed with a stronger spring that would have withstood accident pressures.

NRC Form 366A 19-831 LICENSEE EV	VENT REPORT (LER) TEXT CONTINU	JATIO	N	UCLEAR REG APPROVED O EXPIRES: 8/31	MB NO 3		
FACILITY NAME (1)	DOCKET NUMBER (2)	T	LER NUMBER (6)		Ρ.	AGE (	3)
		YEAR	SEQUENTIAL	REVISION			
PLANT HATCH, UNIT 2	0 15 10 10 10 1 3 6 6	8,8	0,0,7	0,1	0,5	OF	1,7

TEXT (If more space is required, use additional NRC Form 3864's/ (17)

3 . S. E.

Plant engineering, Nuclear Safety and Compliance, and management personnel discussed this situation with respect to both plants. By approximately 1915 CST, management and supervisory personnel had determined that Unit 2 was still in compliance with the plant's Technical Specifications at that point since the unit was in cold shutdown (primary containment integrity was not required).

However, since Unit 1 was operating at rated thermal power, primary containment integrity was required. Plant engineering personnel notified plant operations personnel of these findings at approximately 1915 CST. Plant operations personnel declared the valves on Unit 1 inoperable at 1920 CST. They entered the appropriate Technical Specifications action statement and initiated a Limiting Condition for Operation (LCO). The LCO required that if primary containment integrity could not Le met, an orderly shutdown of the reactor shall be initiated and the reactor shall be brought to hot shutdown within 12 hours and cold shutdown within 24 hours.

NRC personnel were notified of the initiation of plant shutdown under the LCO in accordance with 10 CFR 50.72 reporting requirements at 2019 CST.

At 0030 CST on 2/13/88, while plant operations personnel were initiating the shutdown requirements, plant maintenance and engineering personnel wrote a Maintenance Work Order (MWO) to reestablish primary containment integrity. The outboard air supply valves (three way valve on figure i) were removed, the lead wirds to the valves were tagged and bagged, and the lines were capped. Work started at 0200 CST.

By installing the caps on the lines, this was equivalent to installing a blind flange in the lines and the penerations were effectively sealed. This was a conservative action since the inboard isolation barriers, the vacuum breaker pneumatic actuators, had remained operable as demonstrated by previous LLRT testing. On 2/13/88 at 0245 CST, the work was completed and verified on all the Unit 1 valves. At 033C CST, the LCO was terminated.

NRC FORM 3664

U.S. NUCLEAR REGULATORY COMMISSION RC Form 366A LICENSEE EVENT REPORT (LER) TEXT CONTINUATION APPROVED OMB NO 3150-0104 EXPIRES 8/31/88 DOCKET NUMBER (2) FACILITY NAME (1) LER NUMBER (6) PAGE (3) SEQUENTIAL NUMBER YEAR REVISION PLANT HATCH, UNIT 2 88 0 0,7 0, 1 3, 6, 6 9 6 OF 117 0 |5 |0 |0 |0 | TEXT (If more space is required, use additional NRC Form 3064's) (17)

> Plant engineering, with the assistance of Corporate Office personnel (Nuclear Safety and Licensing - NSLD and Engineering), and the A/E then performed a closer review of the actual Unit 1 design. On 2/19/88 it was confirmed by the valve vendor that the Unit 1 solenoid valves had a stronger spring which would assure pressure retention up to an accident pressure of 35 psig. Since the design basis accident pressure which these valves would actually see is the torus pressure (with a peak of 28 psig) it was then concluded that the Unit 1 design was acceptable in its current configuration.

On 2/22/88, plant Engineering personnel wrote Design Change Request (DCR) 88-31 to correct the design for the Unit 2 solenoid valves (2T48-F342 A through L) and for the A/E to provide necessary support documentation.

On 2/24/88, in the course of reviewing the applicable drawings to prepare the design change to reverse the valves on Unit 2, BEPC personnel detected another design discrepancy. They determined that the piping, per the isometric drawings, should have been pipe class HAE. However, per the P&ID, the pipe class should have been HAB.

Pipe class HAE is ANSI 531.1 piping. Pipe class HAB is ASME Section III Class 2 piping. The FSAR design bases for primary containment piping systems state that the piping attached to the primary containment should be ASME Section III Class 1, 2, or 3 and seismically qualified.

BEPC personnel notified Corporate engineering personnel of this item and Corporate engineering personnel notified site engineering personnel. Upon notification of the deficiency, plant engineering personnel documented the condition on a Deficiency Card (as required by the plant's administrative control procedures) at 0925 CST.

On 2/25/88, corporate personnel and site personnel determined that the piping was outside of the design basis of the system. An action plan was initiated to bring these lines into conformance with their design basis. Additionally plant Nuclear Safety and Compliance (NSC) personnel notified plant operations personnel of the design defect. Plant operations personnel reviewed the 10 CFR 50.72 reporting requirements and determined that the event was reportable. NFC personnel were notified of the condition at 1704 CST.

NRC Folm 366A 19-83)	LICENSEE EVENT	REPORT (LER) TEXT CON			GULATORY COMMISSION OMB NO 3150-0104 1788
FASILITY NAME (1)		DOCKET NUMBER (2)	LER NUMBER	1 (6)	PAGE (3)

YEAR

8.8

NUMBER

0.7

NUMBER

0.1

0,7 OF 1,7

As a result of the design deficiency on Unit 2, plant engineering and NSC personnel investigated to determine if Unit 1 had a similar problem. They determined that the

corresponding Unit 1 system was ANSI B31.1 upgraded material. Since the construction code for Unit 1 allowed the use of B31.1 upgraded material, it was determined that the design deficiency did not affect Unit 1.

0 5 0 0 0 3 6 5

However, plant and corporate personnel continued to review the event to assure that there were no other deficiencies on Units 1 and 2. The Technical Specifications were reviewed again relative to LLRT testing. Table 3.7-4 of the Unit 1 Technical Specifications allows LLRTs not to be performed in the direction required for isolation, provided that this testing is equivalent to, or more conservative than, testing in the accident direction. For Unit 2, Section 4.6.1.2 of the Technical Specifications requires that containment leakage shall be determined in accordance with the criteria specified in Appendix J of 10 CFR 50. Appendix J section III C again requires that the results from the tests for a pressure applied in a different direction will provide equivalent or more conservative results.

The investigation (performed on 2/12/88) had demonstrated that testing of the valves in a reverse direction (to the accident direction) was not a more conservative testing method. The test pressure would force the valves onto their seats which could result in a leakage rate that would be less than they may actually experience. Based on this, it was concluded that the intent of the Technical Specifications was not met for the valves on both Units I and 2 and a reportable condition, per the requirements of 10 CFR 50.73 existed.

Description

2. Dates/Times

Date

2/12/88 0900

Time (CST)

Non-licensed maintenance personnel began the LLRT of Unit 2 isolation solenoid valves (2T48-F342A through L) per plant procedure 42SV-TET-001-2S. This procedure had been revised as of 1/13/88 to change the application of test pressure to these valves (to test in the accident direction).

FLANT HATCH, UNIT 2

CILITY NAME (1)		DOCKET NUMBER (2)	1.0.1	LER N	UMBER (6	8		1	AGE	3)
			YEAR		UENTIAL	-	REVISION		TT	
PLANT HATCH, UNIT 2		0 15 10 10 10 1 3 6 6	8,8	0	,0,7		0,1	0,8	OF	1
KT IIf more snece is required, use additional NRC Form 3	NBEA '2/ (17)		<u> </u>			1-1			10.1	
Date	Time (CST)	Description								
2/12/88	0900- 1400	The first two tes (2T48-F342E & F) applied test pres	would			ain				
	1400 Engineering was asked to a investigating the valve fa was believed that a possib existed for the valves to because of a logic problem									
	1400 - 1545	Engineering revie design drawings, manuals, and P&ID valves were insta drawings, but it the installation for the valves' i	valve s. I lled was s was n	ven t ap per uspe ot a	dor peare the cted pproj	ed f tha	the the			
	1545	The A/E (BEPC) wa determine whether currently install their design func scope included bo	the ed, c tion.	valv ould Th	es, a acco e rec	ompl				
	1900	The A/E called pl advise them of th the vendor. The vendor had stated Unit 1 (model 73K (mode' 75F-009), springs which wou pressure in the r	e dis solen that -001) as in 1d on	cuss oid the and stal ly h	ion v valve valv Unit led, old	vitł ves t 2 had	in j			
	1915	Unit 2 was still the Technical Spe containment integ required when the shutdown. Howeve integrity was sti 1, so plant opera notified of the f	cific rity unit r con 11 re tions	atio was was tain quir per	ns s not in c ment ed or	ince colo n Ur	e i nit			

NRC FORM 3664 (9-83)

1. 1. 2

NRC Fórm 366A (9-83)	LICENSE	E EVENT REPORT	T (LER) TEXT CONTINU	ATION					MB NO 3		104
FACILITY NAME (1)			DOCKET NUMBER (2)			MBER 16			,	AGE	3)
		성격 전 감독을 읽		YEAR	SEQU	IMBER	REN	VISION MBER			
PLANT HATCH	, UNIT 2		0 5 0 0 0 3 6 6	88-	_0	0 7	-	011	99	OF	11
TEXT (If more space is require	id, use edditional NRC Form 3	984's/ (17)									
	Date	Time (CST)	Description								
	Date	111110 (051)	Description								
	2/12/88	1920	Unit 1 licensed p the valves inoper potential acciden psig in the torus not perform their function. Operat initiated LCO 1-8	able s t pres , the isola ions p	sinc sur val atio	e, w e of ves n	ith 28 coul				
		2019	Notification was	made t	to t	he N	RC.				
	2/13/88	0030	MWO 1-88-0606 was the three-way ASC the Unit 1 1T48-F valves, cap the a and tag the elect	0 valv 342 A ir lin	thr thr	utbo ough and	L bag				
		0200	Maintenance perso MWO 1-88-0606.	nnel b	ega	n wo	rk of	n			
		0245	Maintenance perso on MWO 1-88-0606.		omp	lete	d wo	rk			
		0330	Licensed personne 1-88-50,	l term	nina	ted	LCO				
	2/19/88		After clcser revi design it was con vendor that the U springs good for the design was ac	firmed nit 1 35 psi	i by val g t	the ves l here	val nad fore	Ve			
	2/22/88		DCR 88-31 was wri Engineering to pr resolution for th valve discrepancy	ovide e Unit	a d	esig					

NRC FORM 385-(9-83)

the the second

NRC Form 366A (9.83)	LICENSE	EVENT REPOR	T (LER) TEXT CONTINU			ATORY COMMISSION
FACILITY NAME (1)			DOCKET NUMBER (2)	LER NUMBER	and the second sec	PAGE (3)
				YEAR SEQUENT	R NUMBER	
PLANT HATCH,	UNIT 2		0 5 0 0 0 3 6 6	88-00		1 0 OF 1 7
TEXT (If more space is required, i	uae edditional NRC Form 3	854 %/ (17)				
	Date	Time (CST)	Description			
	2/24/88	0925	Deficiency Card 2 to document a dis isometric drawing drawing on the Ur air lines found w design change to discrepancy.	screpancy bet gs and the P& nit 2 vacuum while prepart	tween the MID breaker ing the	
	2/25/88	1704	The Unit 2 air 1 to be outside the action plan was these lines into restart. NRC per of the design def 50.72 reporting n was reviewed for same design defic not deficient. H determined that H the solenoid valu direction, the in and 2 Technical not been met. Th be a reportable of CFR 50.73.	eir design ba initiated to conformance rsonnel were ficiency unde requirements applicabilit ciency; Unit Finally, it w by previously ves in the re spec. fication his was deter	asis. An bring prior to notified er 10 CFR Unit 1 ty of the 1 was vas v testing everse Units 1 ns had rmined to	

# 3. Other Systems Affected

No systems other than the twelve, one half inch diameter air supply lines to the torus to drywell vacuum breakers were affected by this event. These lines provide air for the testing of the vacuum breaker valves. They also provide containment integrity, but to the first isolation valve.

4. Method of Discovery

The fact that the Unit 2 valves were not installed correctly to perform the isolation function was discovered by plant engineering personnel while they were investigating the valves' failure during the LLRT performed per plant procedure 42SV-TET-001-2S.

1 5

NRC Form 366A 19-831	LI	CENSEE EVENT REP	ORT (LE	R) TE	хт с	ONT	INU	JATI	on	4			PPR	AR REGI OVED ON 25: 8/31/	AB NO		
FACILITY NAME (1)			DOCKE	TNUMBE	R (2)			T		LER N	UMBER	(6)		1		PAGE	3)
								YEA	R	SEC	UMB.	AL	RIN	EVISION UMBER			
PLANT HATCH,	UNIT	2	0 15	1010	0 0 1	3,6	6	8	8	_0	101	7 .	_	0,1	1	1 OF	1,5
TEXT (If more spece is required,	use edditional	NRC Form 3664 's/ (17)															
	of p resu were	design deficienc biping on Unit 2 alt of reviewing reviewed as par rect the valve in	was di design t of i	doci mmed	ered ument late	by s.	BEP	PC p ne d ctiv	les	sonr ign	doc	as ume	ant	s			
	test was	fact that the Un ing requirements discovered by pl ew of the event.	for t	he va	alves	we	re	not	f	u11)	/ sa	tis	fi				
5.	Oper	ator Actions															
	Oper	ations personnel	perfo	rmed	the	fo1	100	ing	a	ctic	ons:						
	1.	Declared the U appropriate Te including gene	chnica	1 Spe	ecifi												
	2.	Notifying the 50.72, of the								of 1	10 C	FR					
	Plan	it engineering pe	rsonne	1 per	rform	ned	the	fo	11	owir	ng a	cti	on	s:			
	1.	Investigated t meeting LLRT r				he	Uni	t 2	Y	alve	es n	ot					
	2.	Investigated t supply piping									to	the	a	ir			
	NSC	personnel perfor	med th	e fol	11owi	ng	act	ion	is:								
	1.	Evaluated the requirements o advised other	f 10 C	FR 50	0.72	and	110	) CF	R	50.7	13 a		or	ts.			
6.	Auto	/Manual Safety S	ystem	Respo	onse												
		afety systems ac ired to actuate.	tuated	in t	this	eve	ent,	no	r	were	e an	У					

NRC FORM 366A (9-83)

Arris :

ACILITY NA	ME (1)			DOCKET NUMBER (2)	T	LERA	UMBERI	6)			PAGE (3	1)
					YEAR		QUENTIA NUMBER		REVISION		TT	
PLANT	HATCH,	UNIT 2		0 15 0 0 0 3 6 6	8,8		,0,7		0,1	1,2	OF	1
TEXT Iff more a	pace is required, u	ee edditione/ NRC Form 366	14 'z/ (17)				11	1			1011	-
D.	CAUSE	OF EVENT										
	1.	Immediate (	ause:									
		failure. T	he outboard	this event was co isolation solenoi tic vacuum breake	d valv	re or	1 the	ain				
	2.	Root/Intern	ediate Cause									
				events is design n the following a		lency	и. т	hese	Ð			
		a.	installatio As such, co valves in t rather than design erro since desig	rsonnel failed to n direction for t nstruction person the normal direction in the isolation or was not detected n personnel did n rection was not co	he iso nel in on of direc d duri ot ide	plati proc ctior ing t entif	ion v lled cess h. T testi fy th	alve the flow his ng,	es. ∀,			
		b.	instrument containment requirement Class 2 com lines were generally w function.	rsonnel did not r air lines penetra were required to s of the ASME Sec ponents. Typical not considered as were not believed The condition of and this uniquene ciency.	ting p meet tion 1 ly, in proce to hav	the the III ( nstru ess 1 ve a ir su	Code ument lines safe upply	for ain and ty lin	r d nes			
ε.	ANALY	SIS OF EVENT										
	timely that fuel by the	y protection involve the and nuclear	against the gross releas system proce of appropria	ssociated isolati onset and conseq e of radioactive ss barriers. Thi te process lines	uences mater s prof	s of ials tecti	acci from ion o	den the ccui	ts e rs			

2 4 - 2

NRC Form 366A (9-63)	EVENT REPORT (LER) TEXT CONTIN	UATIO	N	U.S	APPROVED O EXPIRES 8/31	MB NO. 3150-0	
FACILITY NAME (1)	DOCKET NUMBER (2)		LE	R NUMBER (6)		PAGE	(3)
	영양 이번 영양의 방법을 가지 않는	YEAR	-	SEQUENTIAL NUMBER	REVISION		
PLANT HATCH, UNIT 2	0 15 10 10 10 1 31 6 16	81.8	_	0 1 01 7	- 011	11 3 OF	117

TEXT (If more space is required, use additional NRC Form 3664's) (17)

For a release of radioactive materials to occur, the following barriers would have to be breached: fuel cladding, reactor coolant pressure boundary, and primary containment. For a gross failure of the fuel cladding, the primary containment and reactor vessel isolation control system initiates isolation of the reactor vessel to contain released fission products. For a breach in the nuclear system process barrier outside the primary containment, the isolation control system acts to interpose additional barriers between the reactor and the breach. This limits the potential release products and conserves reactor inventory. For a breach of the nuclear system process barrier inside the primary containment, the isolation control system acts to close off release routes through the primary containment and to trap radioactive materials inside primary containment.

The instrument air lines used for testing of the Unit 1 and Unit 2 drywell to torus vacuum breakers are part of the primary containment system. The solenoid valves are the secondary barrier used to secure primary containment integrity. The pneumatic actuators (air cylinder and piston on figure 1) are the primary barrier.

Were a severe accident (such as a Loss of Coolant Accident - LOCA) to occur, the radioactive materials released during the accident would pass through the water in the suppression pool (torus). Many of the radioactive materials would be removed during their passage through the suppression pool water. Some radioactive materials could accumulate in the air space above the suppression pool water. Were one of the pneumatic actuators (the primary barrier to the release of radioactive materials in the torus to drywell vacuum breaker air test lines) to fail, some of these radioactive materials could be introduced into the air supply piping at accident pressures.

The air supply piping meets all of the requirements for an ASME Class 2 component except complete material records are not available.

NRC Form 386A 19-83	ENT REPORT (LER) TEXT CONTINU	JATIO	N	∪.\$	APPS		MB N	0 3150-0		
FACILITY NAME (1)	DOCKET NUMBER (2)	T	LEI	R NUMBER (6)	UMBER (6)			PAGE (3)		
영화 승규는 집에 집에 집에 많이 했다.	영국은 경기에 가장하는 것이 가장 중	YEAR		SEQUENTIAL NUMBER		NEV 3ION				
PLANT HATCH, UNIT 2	0 5 0 0 0 3 6 6	8 8	_	0 0 7	_	0,1	1,	4 OF	1 7	

TEXT Iff more space is required, use additional NRC Form 3964's/(17)

8 (P) (N = 1 = 1

The NRC has reviewed the qualifications of this piping and has concluded that ". . . the lines as installed provide an acceptable level of quality and safety, and that replacement of the lines just to satisfy the documentation requirements for Class 2 piping would not add significantly to the safety of the plant."

Based on the above information, it is concluded that this event had no adverse impact on nuclear plant safety. Additionally, this analysis is applicable for all other plant operating conditions.

# F. CORRECTIVE ACTIONS

The corrective actions for these events included:

- Initiating the conservative LCO action on Unit 1 based on the information known at the time. This included capping all the Unit 1 vacuum breaker air lines.
- Initiating appropriate design activities to correct the installation of the Unit 2 solenoid valves and to bring the air lines into compliance with FSAR commitments. The direction of the Unit 2 solenoid valves (2T48-F342 A through L) has been reversed.
- 3. Initiating a complete investigation of the event. During the week of 4/18/88, Georgia Power Company (GPC) Quality Assurance (QA) personnel performed an audit of BEPC. This audit was conducted to determine: 1) the adequacy of the BEPC design review process, 2) how the instrument air lines were originally designed and installed to an America: National Standards Institute (ANSI) B31.1 piping code, and 3) why the 2T48-F342A-L valves were not installed to meet the FSAR primary containment design requirements.

NRC Porm 366A (9-83) LICENSEE E	EVENT REPORT (LER) TEXT CONTIN	UATION	APPROVED	U.S. NUCLEAR REGULATORY COMMISSION APPROVED OMB NO. 3150-0104 EXPIRES: 8/31/98					
PACILITY NAME (1)	DOCKET NUMBER (2)	1	ER NUMBER (6)	PAGE (3)					
	집 같은 것을 가지만 것이 많이.	YEAR	SEQUENTIAL REVISION NUMBER NUMBER						
PLANT HATCH, UNIT 2	0 15 10 10 10 1 3 6 6	8,8	0,0,7 0,1	1, 5 OF 117					

TEXT (If more space is required, use additional NRC Form 38CA's) (17)

The audit determined that at the time of the original design of the instrument air lines, there was no formal design verification performed by multiple disciplines. Each discipline performed its own review. The design of the instrument air lines was performed by members of the control design group rather than by members of the mechanical design group. The mechanical group normally is assigned responsibility to ensure that the design meets ASME code requirements. Also, the designers did not indicate the correct orientation of the valves. This was a design oversight.

BEPC has implemented corrective actions to strengthen its design control process. These corrective actions include: 1) strengthening administrative controls to include a formal design verification within each discipline, 2) proceduralizing the required coordination between each discipline, 3) requiring the performance of an integrated discipline design review, as required, for those designs requiring multi-discipline action, 4) training design personnel on the design verification methodology, and 5) increasing management focus on design verification.

4. Initiating a Design Change Request (DCR 88-30) to replace the existing Unit 1 solenoid valves' (1T48-F342A-L) springs with stronger springs. These springs will allow the valves to be tested at containment accident pressure (which is above the torus accident pressure). It is currently anticipated that the springs will be replaced in the next scheduled Unit 1 refueling outage which is tentatively scheduled for the Fall of 1988.

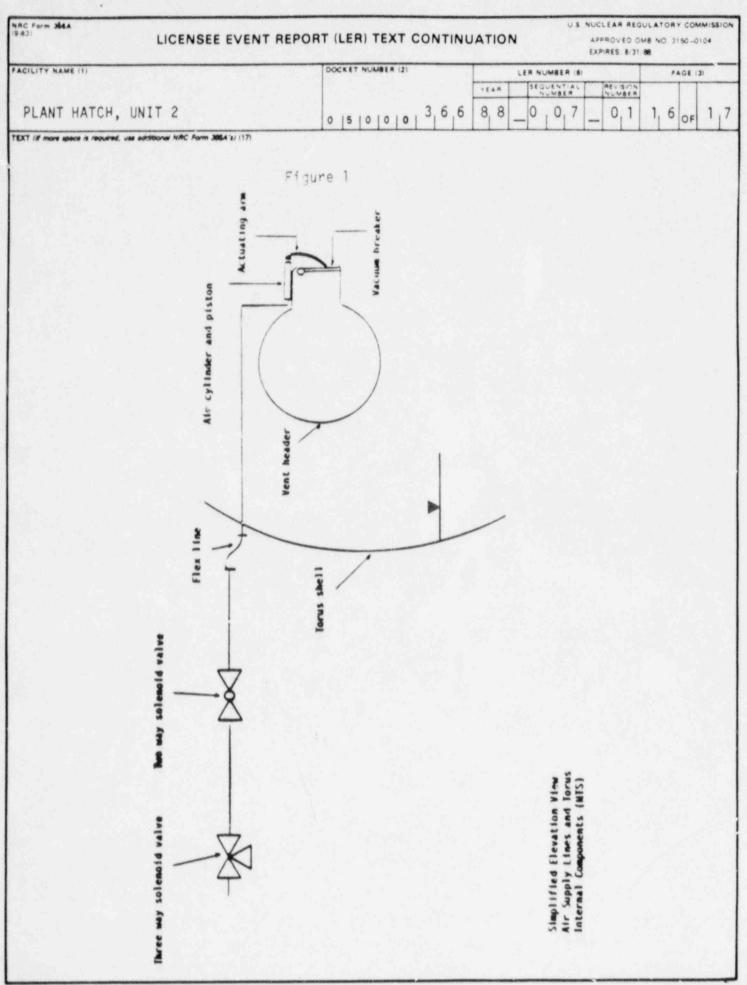
## G. ADDITIONAL INFORMATION

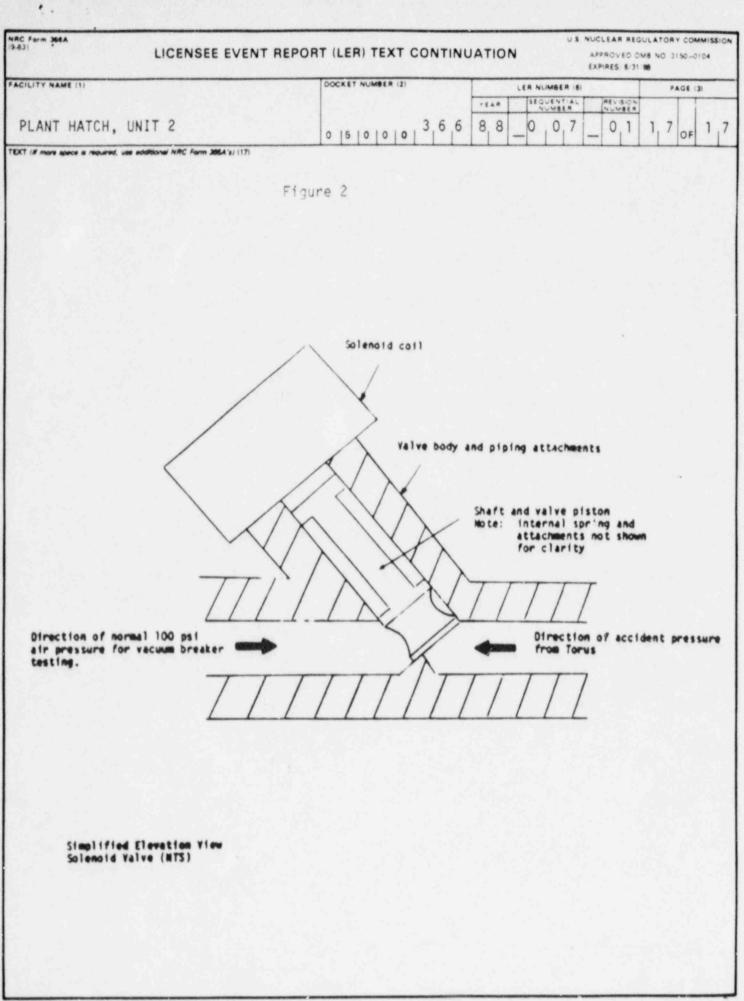
FAILED COMPONENT(s) IDENTIFICATION

MPL (Plant Index Identifier): 2T48-F342 A-L Manufacturer: Target Rock Model Number: 75F-009 Type: Solenoid globe valve EIIS: JM

2. PREVIOUS SIMILAR EVENTS

No previous similar events were noted.





Georgia Power Company 335 Piedmont Avenue Atlanta, Georgia 30308 Telephone 404 526 6526

2.2 4

Mailing Address Post Office Box 4545 Atlanta, Georgia 30302

Nuclear Operations Department



SL-4727 0303I X7GJ17-H310

# July 11, 1988

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

# PLANT HATCH - UNIT 2 NRC DOCKET 50-366 OPERATING LICENSE NPF-5 LICENSEE EVENT REPORT FAILED VALVES DISCLOSE DESIGN DEFICIENCIES AND TECHNICAL SPECIFICATION VIOLATION

#### Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(i) and 10 CFR 50.73 (a)(2)(ii), Georgia Power Company is submitting the enclosed, revised, Licensee Event Report (LER) concerning an event where a portion of a plant system was outside of its design basis. This disclosed a condition prohibited by the plant's Technical Specifications. The event occurred in February of 1988 at Plant Hatch - Unit 2. It was later determined that some of these conditions were present on Unit 1.

Sincerely,

W.S. Hant The

W. G. Hairston, III Senior Vice President

LGB/1g

Enclosure: LER 50-366/1988-007 Rev 1

c: (see next page)



1 12 1 4

.

U. S. Nuclear Regulatory Commission July 11, 1988 Page Two

c: <u>Georgia Power Company</u> Mr. J. T. Beckham, Jr., Vice President - Plant Hatch Mr. L. T. Gucwa, Manager Nuclear Safety and Licensing GO-NORMS

U. S. Nuclear Regulatory Commission, Washington, D. C. Mr. L. P. Crocker, Licensing Project Manager - Hatch

U. S. Nuclear Regulatory Commission, Region II Dr. J. N. Grace, Regional Administrator Mr. J. E. Menning, Senior Resident Inspector - Hatch

0303I