Approval Procedure No. Vogtle Electric Generating Plant 18028-C or he Lo Co NUCLEAR OPERATIONS Pevision No. Dale and. Georgia Power . Unit COMMON Page No of 19 Miderer RITH CONCERN 05-90-90 B6 NOTE, CS CAUTION, ABNORMAL OPERATING PROCEDURE CQ CIS LOSS OF INSTRUMENT AIR 19 PURPOSE This procedure specifies response to a loss of Instrument Air pressure. It is divided into the following sub-procedures: Α. Loss of Instrument Air At Power (Page 2). Loss of Instrument Air In Mode 3 (Page 7). Β. Loss of Instrument Air In Modes 4, 5 or 6 (Page 12). С. SYMPTOMS SERVICE AIR HDR LO PRESS Annunciator. INSTR AIR EQUIP LO PRESS ISO Annunciator. Instrument Air supply header pressure indicating less than 80 psig on PI-9361 at Main Control Board. INSTR AIR CNMT SPLY LINE BREAK Annunciator. Trip of running air compressor and standby fails to start.

DT OBTAINED
vailable air for the affected
ne ite Seal
nt air header wers to less than ch an operator ervice Air Header alve PV-9375 is

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2	ACTION/EXPECTED RES	PONSE	RES	PONSE NOT OBTAINED
		NOTE		
	UNIT 1 SERV AIR HD of ALB01 will annu when instrument ai is established.	I late in the	Unit 1	Control Room
	If the pressure in to both units lowe Unit 2 headers sho	rs below 80 p	alo thi	a Unit 1 and
	SERVICE AIR SWING ALBO1 may annuncia Unit 1 and Unit 2 other.	te in the Uni	t 1 Cont	trol Room if the
A.3 .	Check air compresso running on affected IF 2 or more, THEN go to Step A5.	unit -	(	Verify all available air compressors for both units are running.
				F the total number of Funning Unit 1 and Unit 2 For compressors is 4 or FOR dispatch operator Equipped with a radio to establish an open Instrument air header of tween Unit 1 and Unit 2 by opening the following valves:
			•	Air Receiver 504 to Air Dryer Isolation Valve

 2-2401-U4-510, Service Air Unit 1 to Unit 2 Header Isolation Valve

The operator will remain at the valve location and establish communication with the Control Rom.

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ACTION/EXPECTED RE	SPONSE	RESPONSE	NOT OBTAINED
		press unaff less THEN unaff	e instrument air ure of the ected unit lowers t than 80 psig, restore/reisolate ected unit ument air as ws:
		UN	<u>IIT 1</u>
		• Sh 2- • Ve	en valve 2401-U4-510 ut valve 2401-U4-510 rify swing compress running
		UN	IT 2
		• 0p 2- • Ve	ut valve 2401-U4-510 en valve 2401-U4-510 rify swing compress running.
	NOTE		
Loss of Turbine Bu Extraction Steam N High Level Dump va	RVs and fail all H	air wil Feedwate	l close all r Heater
A4. If necessary, dispa operator to place I Air Dryers in the T Chamber/Full Flow m 13711, INSTRUMENT A	nstrument Wo mode per		
A5. Identify the source	of the		

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	4				danne i muri na manan sara rancai. Majaranan na manga y
	ACTION/EXPECTED RES	PONSE		RESPONSE	NOT OBTAINED
A6.	IF header pressure below 70 psig, THEN dispatch an op to ensure Turbine B Instrument Air Isol Valve PV-19414 is c	erator Building Ation	A6.	Go to St	ep A8.
A7.	IF the instrument a header pressure can restored, <u>THEN</u> immediately lo reset and reopen PV	cally	Α7.	THEN trip Initiate TRIP OR	ument air header can NOT be restored ess than 70 psig, the reactor and 19000-C, E-O REACTO SAFETY INJECTION and ction B of this a.
		NOT	r F		
	Total loss of inst continued plant op	eration.			
	Manual Res. Annual and a second second		A.H.	IF source	A AT the lookage
no .	Verify header press Stable Or Rising.	ure -		cannot be	a of the leakage a isolated, form the following:
no .	Verify header press Stable Or Rising.	ure -		a. Restor	e isolated.
n0 .	Verify header press Stable Or Rising.	ure -		a. Restor <u>unaffe</u> air as	e isolated, form the following: re/reisolate the acted unit instrumer
n 0 .	Verify header press Stable Or Rising.	ure -		a. Restor unaffe air as <u>UNI</u> • Ope 1-2 • Shu 2-2 • Ver	e isolated, form the following: re/reisolate the acted unit instrumer follows: TT 1 en valve 2401-U4-510 at valve 2401-U4-510 rify swing compresso
<b>NO</b> .	Verify header press Stable Or Rising.	ure -		a. Restor unaffe air as UNI • Ope 1-2 • Shu 2-2 • Ver is	e isolated, form the following: re/reisolate the acted unit instrument follows: IT 1 en valve 2401-U4-510 it valve 2401-U4-510 cify swing compresso running.
	Verify header press Stable Or Rising.	ure -		a. Restor <u>unaffe</u> air as <u>UNI</u> • Ope 1-2 • Shu 2-2 • Ver is <u>UNI</u>	e isolated, form the following: re/reisolate the acted unit instrument follows: TT 1 en valve 2401-U4-510 at valve 2401-U4-510 rify swing compresso
	Verify header press Stable Or Rising.	ure -		a. Restor Unaffe air as UNI • Ope 1-2 • Shu 2-2 • Ver is UNI • Shu 1-2	e isolated, form the following: re/reisolate the acted unit instrumer follows: IT 1 en valve 2401-U4-510 it valve 2401-U4-510 running. IT 2 it valve 2401-U4-510
	Verify header press Stable Or Rising.	ure -		a. Restor <u>unaffe</u> <u>air</u> as <u>unaffe</u> <u>air</u> as <u>air</u>	e isolated, form the following: re/reisolate the acted unit instrumer follows: IT 1 en valve 2401-U4-510 at valve 2401-U4-510 rify swing compresso running. IT 2 at valve

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	ACTION/EXPECTED RESPO	DNSE		RESPONSE NOT OBTAINED
A9.	Monitor Instrument Ai Header pressure on PI-9361 - Less Than 1 psig.	.r .00	A9.	Return to procedure and step in effect.
A10.	Determine if plant operation may continu under the UOP in effe	ie ct.	A10.	Commence Unit Shutdown in accordance with the appropriate UOP.
A11.	WHEN the cause has be corrected, THEN initiate 13710, SERVICE AIR SYSTEM an 13711-C, INSTRUMENT A SYSTEM to restore sys to normal.	d IR		

END OF SUB-PROCEDURE TEXT

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		AP THEORY			
	<u>B. LOSS</u>	OF INSTRU	MENT AI	R IN MODE 3	
	ACTION/EXPECTED RESP	ONSE		RESPONSE NOT	OBTAINED
B1.	Verify all availabl compressors for the affected unit - Run		B1.	Start all ava compressors f unit.	ilable air or the affecte
B2.	Check if con of compressor is set t affected unit -	swing	B2.	not running t unaffected un	compressor is o support it,
	IF control is set t affected unit, THEN start swing co				perator to the affected
				unit:	
				UNIT 1	
				504 to	Air Receiver Air Dryer on Valve

- 1-2401-U4-510 open
  Service Air Unit 1 to
  Unit 2 Header Isolation
  Valve 2-2401-U4-510
  shut
- Unit 1/Unit 2 Control Transfer Switch A-HS-19458 in "UNIT 1" position

UNIT 2

- Valve 1-2401-04-510 shut
- Valve 2-2401-04-510 open
- Switch A-HS-19458 in "UNIT 2" position

b. Start swing compressor.

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	ACTION/EXPECTED RESEC	DNSE	RESPONS	E NOT OBTAINED
83.	Monitor Instrument A supply header pressu PI-9361 - Less Than 100 psig.		Go to 1	Step B11.
Β4.	If necessary, dispat operator to place in Air Dryers in the Ty Chamber/Full Flow mo 13711, INSTRUMENT AT	nstr ment ≪o ode per		
85.	IF header pressure is below 70 psig, THEN dispatch an ope to ensure Turbine Bu Instrument Air Isola Valve PV-19414 is ci	erator uilding ation		
		and the second designed in the second designed and the	A construction of the second sec	
	n	NOTE		
5	If Instrument Air preparation should SG Atmospheric Rel	pressure contin be made for ma	ues to d nual con	egrade, trol of the
В6.	preparation should	pressure contin be made for ma ief Valves. ic B6. ntaining	nual con	egrade, trol of the m the following:
В6.	Verify SG Atmospheric Rel Verify SG Atmospher Relief Valves - Mai SG Pressure Between	pressure contin be made for ma ief Valves. ic B6. ntaining	Perfor a. Ens	trol of the
В6.	Verify SG Atmospheric Rel Verify SG Atmospher Relief Valves - Mai SG Pressure Between	pressure contin be made for ma ief Valves. ic B6. ntaining	Perfor a. Ens Rel SG SG SG	m the following:
В6.	Verify SG Atmospheric Rel Verify SG Atmospher Relief Valves - Mai SG Pressure Between	pressure contin be made for ma ief Valves. ic B6. ntaining	Perfor A. Ens Rel SG SG SG SG SG SG	ure SG Atmospheric ief Valves in AUTO: 1: PIC-3000A 2: PIC-3010A 3: PIC-3020A

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		abouar			
	ACTION/EXPECTED RE	SPONSE		RESPONSE	NOT OBTAINED
	44.	NOT			
	Statistics -	NOT			
	A loss of Inscreas fail to maximum s failure of the Fu Pit gate seal ass header.	peed. Loss el Transfer	of Se Canal	rvice Air and/or C.	will cause ask Loading
B8.	Establish charging Attachment A. Esta Charging Without I Air and ensure PRZ trending to Progra Value.	blishing nstrument R level	B8.	IF PRZR check for cooldown	level is falling, r an excessive RC rate.
B9.	When Tavg has stab	ilized,			
	shut down 3 RCPs.				
	shut down 3 RCPs.	CAUT	ION		
	Cooldown to Mode Instrument Air pr is available to t Condensate Storag	<u>CAUT</u> 4 should no essure is r he Reactor	t be i estore Makeup	d and make Water Svs	up water
810.	Cooldown to Mode Instrument Air pr is available to t	<u>CAUT</u> 4 should no essure is r he Reactor e and Degas	t be i estore Makeup ifier	d and make Water Sys System. IF VCT 1e 71, ensur	evel falls below te that Charging tion is aligned t

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	and and			
	ACTION/EXPECTED RE	SPONSE	RESPON	SE NOT OBTAINED
	Notice in a local data was and a state of a state of the			DE NOT OBTRINED
B11.	Investigate the ca low Instrument Air pressure:	use of		
	• Check Air Compr	essors		
	· Check Air Dryer	5		
	· Check piping in	tegrit".		
		NO	<u>re</u>	
	The CVCS Boronome	ter will be	e inoperable u	ntil instrument
	air pressure is r	estored.		
1.1.2	TE DETE lovel see			
212.	IF PRZR level cont rising,			
	AND instrument air pressure cannot be			
	restored,			
	THEN place the Rea Head Vent System 1	ctor		
	path in service.	ecdown		
113.	IF the Main Turbin	e turning		
	gear disengages or be engaged,	needs to		
	THEN initiate 1380	0, MAIN		
	TURBINE OPERATION re-engage/engage t			
	gear.			
1.1				
	Correct the cause loss of air pressu		B14. Maintai	In Mode 3 conditions
	Establish normal in		B15. Return	to Step B1.
	air header pressur	е.		
16	Open CNMT Testan	at Ada		
	Open CNMT Instrumen Header Isolation V			
	using HV-9378A and HV-9378B.			
	uv=33/0D.			

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				The second
	ACTION/EXPECTED RE	SPONSE	RESPO	NSE NOT OBTAINED
B17.	Establish normal c letdown and RCP se injection flow by initiating 13006, STARTUP AND NORMAL OPERATION.	al CVCS		
B18.	Locally reset and of following Instrument and Service Air Systerip valves:	nt Air		
	a. Turbine Building Instrument Air Isolation Valve by initiating 1 INSTRUMENT AIR	PV-19414 3711.		
	b. Service Air Isc: PV-9375 by init: 13710, SERVICE A SYSTEM.	iating		
819.	Continue operation accordance with the Operating Procedure currently in effect	e Unit e		
	ENI	O OF SUB-PRO	OCEDURE TEXT	

PROCI	EDURE NO.	REVISION	REVISION		PAGE NO.	
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	C. LOSS OF 1	INSTRUMENT	AIR IN	MODES	4, 5 OR 6	
	ACTION/EXPECTED RES	PONSE		RESPON	SE NOT OBTAINED	
cı.	Verify all availabl compressors for the affected unit - Run		C1.	Start a compres unit.	all available air ssors for the affected	
32.	Check if control of compressor is set t affected unit -	0	C2.	not rur	swing compressor is nning to support cted unit,	
	IF control is set t affected unit. THEN start swing co			a. Disp veri unit	patch operator to Ify for the affected	
				Ţ	JNIT 1	
				• 5 • 1 • 1 • 1 • 1 • 1 • 1 • 1 • 1 • 1 • 1	Service Air Receiver 504 to Air Dryer Isolation Valve -2401-U4-510 open Service Air Unit 1 to Unit 2 Header Isolation Valve 2-2401-U4-510 Shut Unit 1/Unit 2 Control Stansfer Switch A-HS-19458 in "UNIT 1" Sosition	
				• V • V • V	Valve 1-2401-U4-510 hut Valve 2-2401-U4-510 pen Switch A-HS-19458 in 'UNIT 2" position	

b. Start swing compressor.

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VEGI	EDURE NO.	REVISION		PAGE NO.	
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	ACTION/EXPECTED RES	PONSE	RESPON	ISE NOT OBT	AINED
		NOTE			
	Loss of Instrume fail to maximum cause failure of Cask Loading Pit in to Service Ai	speed. Loss o the Fuel Tran gate seal ass	f Service sfer Cana	Air will 1 and/or	
сз.	Monitor Instrument Header pressure on PI-9361 - Less Than 100 psig.		. Go to	Step Cl0.	
C4.	If necessary, dispa operator to place I Air Dryers in the T Chamber/Full Flow m 13711, INSTRUMENT A	nstrument wo ode per		~~	~
	Loss of instrument outlet valves to f valves to fail ful	ail full open a	will caus and the H	e the RHR X bypass	нх
c5.	Trip one RHR Pump i two are running.	f			
	IF in Mode 6, suspen	nd			
C6.	ail fuel movement.				

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P     18028-C     7     14       ACTION/EXPECTED RESPONSE     RESPONSE NOT OBTAIN       IF any RCPs are running, THEN monitor No. 1 seal leakoff temperature and flow until charging pump is restarted.     Response Not OBTAIN       IF RCS temperature is falling rapidly, THEN trip the running RHR Fump.     C9. Reduce CCW flow to operating RHR Train	W flow to the
ACTION/EXPECTED RESPONSE RESPONSE NOT OBTAIN IF any RCPs are running, THEN monitor No. 1 seal leakoff temperature and flow until charging pump is restarted. IF RCS temperature is falling rapidly, THEN trip the running RHR	W flow to the
ACTION/EXPECTED RESPONSE RESPONSE NOT OBTAIN IF any RCPs are running, THEN monitor No. 1 seal leakoff temperature and flow until charging pump is restarted. IF RCS temperature is falling rapidly, THEN trip the running RHR C9. Reduce CCW flow to roperating RHR Train	W flow to the
IF any RCPs are running, THEN monitor No. 1 seal leakoff temperature and flow until charging pump is restarted. IF RCS temperature is falling rapidly, THEN trip the running RHR C9. Reduce CCW flow to roperating RHR Train	W flow to the
leakoff temperature and flow until charging pump is restarted. IF RCS temperature is falling rapidly, THEN trip the running RHR C9. Reduce CCW flow to r operating RHR Train	W flow to the RHR Train.
leakoff temperature and flow until charging pump is restarted. IF RCS temperature is falling rapidly, THEN trip the running RHR C9. Reduce CCW flow to r operating RHR Train	W flow to the RHR Train.
leakoff temperature and flow until charging pump is restarted. IF RCS temperature is falling rapidly, THEN trip the running RHR C9. Reduce CCW flow to r operating RHR Train	W flow to the RHR Train.
IS restarted. IF RCS temperature is C9. Reduce CCW flow to restarting rapidly, THEN trip the running RHR operating RHR Train	W flow to the RHR Train.
IF RCS temperature is C9. Reduce CCW flow to refailing rapidly, operating RHR operating RHR Train	W flow to the RHR Train.
falling rapidly, operating RHR Train THEN trip the running RHR	W flow to the RHR Train.
falling rapidly, operating RHR Train THEN trip the running RHR	RHR Train.
THEN trip the running RHR Pump.	

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	a term	and the second	and an experimental second	
A	CTION/EXPECTED RE	SPONSE	RESPON	ISE NOT OBTAINED
	4 A.			
		NOTE		
	As the RCS temper be increased grad is(are) fully ope	ually until v	to 250°F, th valve(s) 120	e RHR flow may 05-U6-019 (020)
C10) I	F RCS temperature Fove 325°F	rises		
	- OR -			
	F, in Mode 6 and			
1	emperature rises 85°F			
	HEN place A(B) tr HR cooling in ser			
a	. Dispatch operat establish commu at RHR Pump Dis 1205-U6-019 (02 flow indicators FIS-0610, (0611	nication charge 0) and		
Ъ	. Unlock and Thro 1205-U6-019 (02) two turns open start RHR Pump	ttle 0) to and then		
c	. Operate 1205-U6 (020) to mainta			
	<ul> <li>RCS cooldown LESS THAN 10</li> </ul>			
	<ul> <li>RHR flow rate</li> <li>GREATER THAN</li> </ul>			
	<ul> <li>CCW temperate RHR exchanges than 195°F.</li> <li>annunciator A ALB61, NSCW ( TRAIN A TEMP (A02 of ALB65) CCW ACCW TRAS ALARM) must m actuated.</li> </ul>	rs - LESS The A01 of CCW ACCW ALARM 1, NSCW IN B TEMP		

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	and the second				real and a second s
	ACTION/EXPECTED RES	PONSE		RESPONSE	NOT OBTAINED
:11.	IF the Main Turbine gear disengages or be engaged, THEN initiate 13800 TURBINE OPERATION, re-engage/engage tu gear.	needs to , MAIN to			
12	IF header pressure 70 psig, THEN dispatch an ope ensure Turbing Build Instrument Air Isol Valve PV-19414 is c	erator to ding ation			
13.	Investigate the cause low instrument air pressure:	se of			
	• Check Air Compres	ssors			
	• Check Air Dryers				
	• Check piping inte	egrity.			
	Correct the cause of loss of air pressure		C14.	condition	stable RCS ns until a source ument air is hed.
	Establish ormal instrument air heade pressure.	r	C15.	Return t	o Step Cl.
	Open CNMT Instrument Isolation Valves HV- or HV-9378B.				
	If necessary, place non-running RHR Trai service by initiatin 13011, RESIDUAL HEAT REMOVAL SYSTEM.	n in Ig			

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	a start	and the second se		#/ VL #2
	ACTION/EXPECTED RE	SPONSE	RESPON	SE NOT OBTAINED
	Establish normal c and RCP Seal injec by initiating 1300 STARTUP AND NORMAL	tion flow		
C19.	Establish normal 1 flow:	etdown		
	• From CVCS			
	-OR-			
	• From RHR			
C20.	Locally reset and following Instrume and Service Air Sy valves:	nt Air		
	a. Turbine Buildin Instrument Air PV-19414 by ini 13711, INSTRUME SYSTEM.	Isolation tiating		
	b. Service Air Iso PV-9375 by init 13710, SERVICE SYSTEM.	iating		
C21.	Align the CVCS Sys required by the Un Operating Procedur currently in effec	it e		
C22.	Continue operation	IS.		
		END OF PROCED	URE TEXT	

18028-C ESTABLISHING C	7 <u>ATTACHMENT A</u> CHARGING WITHOUT INST	18 of 19 Sheet 1 of 2			
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	HARGING WITHOUT INS				
ESTABLISHING C	HARGING WITHOUT INST				
	And the second	TRUMENT AIR			
stablish Charging W	ith Train A Emergend	cy Bus Energized:			
. Verify Train A ch	arging isolation val	lves - OPEN:			
• HV-8116					
	ly verify if Train H	B De-energized)			
. Shut the followin	g charging isolation	n valves:			
<ul> <li>HV-8485A</li> <li>HV-8106</li> </ul>					
<ol> <li>Dispatch local operators to maintain 8 to 13 gpm seal injection flow by throttling OPEN:</li> </ol>					
UNIT 1	UNIT 2				
1-1208-06-152	2-1208-06	5-152			
Maintain desired	charging flow using	HV-0190A.			
	<ul> <li>Verify Train A ch</li> <li>HV-8116</li> <li>HV-0190A</li> <li>HV-8105 (local</li> <li>Shut the followin</li> <li>HV-8485A</li> <li>HV-8106</li> <li>Dispatch local op injection flow by</li> <li><u>UNIT 1</u></li> <li>1-1208-U6-152</li> </ul>	<ul> <li>HV-0190A</li> <li>HV-8105 (locally verify if Train 1)</li> <li>Shut the following charging isolation</li> <li>HV-8485A</li> <li>HV-8106</li> <li>Dispatch local operators to maintain injection flow by throttling OPEN:</li> <li><u>UNIT 1</u></li> <li><u>UNIT 2</u></li> </ul>			

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		an Sana	ATTACHMENT A (Cont'd.)	Sheet 2 of 2
Β.	Estab	lish Chargir	ng With Train B Emergency B	lue Energiand.
			B CCP - RUNNING.	na puergized:
	2. Ve	rify Train H	3 charging isolation valve	HV-0190B - OPEN.
	3. Ve	rify Train B	BIT outlet isclation value	We HV-8801B - OPEN.
	4. Sh	ut the follo	wing charging isolation va	lves:
	•	HV-8438 HV-8485B HV-8105		
	5. Di in	spatch local jection flow	operators to maintain 8 t by throttling OPFN:	o 13 gpm seal
		UNIT 1	UNIT 2	
		1-1208-U6-1	.51 2-1208-06-15	1
	6. Ma	intain desir	ed charging flow using HV-	0190B.
			END OF ATTACHMENT A	