



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76011

JAN 29 1988

Docket No. 50-458
License No. NPF-47
EA No. 87-229

Gulf States Utilities
ATTN: Mr. James C. Deddens
Senior Vice President, (RBNG)
Nuclear Licensing
P. O. Box 220
St. Francisville, LA 70775

Gentlemen:

This refers to the Enforcement Conference conducted in the NRC Region IV Office on December 14, 1987, with you and other members of your staff, and Region IV and Office of Nuclear Reactor Regulation personnel. This conference was related to the findings of the NRC inspection conducted during the period November 1-21, 1987, which were documented in our NRC Inspection Report 50-458/87-28, dated December 7, 1987.

The subjects discussed at this meeting are described in the enclosed Meeting Summary.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter will be placed in the NRC's Public Document Room.

Should you have any questions concerning this matter, we will be pleased to discuss them with you.

Sincerely,


L. J. Callan, Director
Division of Reactor Projects

Enclosure:
Meeting Summary

cc w/encl: (see next page)

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PDR ADOCK 05000458
Q PDR

1645
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JAN 29 1988

Gulf States Utilities

-2-

cc w/enclosure:
Gulf States Utilities
ATTN: J. E. Booker, Manager-
River Bend Oversight
P. O. Box 2951
Beaumont, Texas 77704

Louisiana State University,
Government Documents Department

Louisiana Radiation Control Program Director

bcc to DMB (IE45)

bcc distrib. by RIV:

DRP

R. D. Martin, RA

Lisa Shea, RM/ALF

RPSB-DRSS

Project Engineer, DRP/C

W. Paulson, NRR Project Manager

DRS

D. Powers

Resident Inspector
Section Chief (DRP/C)
RIV File

RIV:C:DRP/C
EHoller:vsg
1/27/88

LU *set*
DAPowers
1/27/88

LJCallan
1/27/88

RDMartin
1/27/88

IE45
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ATTACHMENT
GULF STATES UTILITIES
DECEMBER 14, 1987
MEETING SUMMARY

Licensee: Gulf States Utilities (GSU)
Facility: River Bend Station (RBS)
License No.: NPF-47
Docket No.: 50-458
SUBJECT: ENFORCEMENT CONFERENCE CONCERNING NRC INSPECTION FINDINGS
(INSPECTION REPORT 50-458/87-28)

On December 14, 1987, representatives of Gulf States Utilities, met in Arlington, Texas, with NRC Region IV and NRR personnel to discuss the findings documented in the NRC Inspection Report dated December 7, 1987. The attendance list and licensee presentation are attached. The meeting was held at the request of NRC, Region IV.

The NRC discussed its concern regarding a mispositioned process isolation root valve for one channel of high drywell pressure instrumentation. The licensee discussed the cause for the mispositioned valve, how the problem was discovered, the safety significance of the matter, and corrective actions taken by the licensee.

Enclosures:

1. Attendance List
2. GSU Presentation

ENCLOSURE 1

ENFORCEMENT CONFERENCE ATTENDANCE LIST - REGION IV

GULF STATES UTILITIES

NRC Attendees: J. Montgomery, Deputy Regional Administrator
J. Callan, Director, Division of Reactor Projects
A. Beach, Deputy Director, Division of Reactor Projects
J. Milhoan, Director, Division of Reactor Safety
D. Powers, Enforcement Officer
J. Jaudon, Chief, Projects Section A
D. Hunter, Chief, Technical Support Section
W. Seidle, Chief, Operational Programs Section
G. Madsen, Acting Chief, Projects Section C
D. Chamberlain, Senior Resident Inspector
W. Paulson, Project Manager, NRR
H. Scott, Enforcement Staff

Licensee Attendees: J. C. Deddens, Senior Vice President, River Bend
Nuclear Group
J. E. Booker, Manager Oversight
E. R. Grant, Director, Nuclear Licensing
T. F. Plunkett, Plant Manager
M. Sankovich, Manager Engineering
D. Williamson, EPS Supervisor
J. Schippert, OPS ENG

Noted DEC 13 1987 I. Schippert

December 14, 1987

RIVER BEND

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SEQUENCE OF EVENTS	2, 3, 4
SYSTEM LOGIC	5, 6, 7, 8, 9
SAFETY SIGNIFICANCE	10, 11, 12, 13, 14
CORRECTIVE ACTION	15, 16
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INTRODUCTION

- August 29, 1985: River Bend receives its Low Power License
- October 31, 1985: River Bend enters Mode 2 and reaches initial criticality
- November 20, 1985: RBS receives Full Power License
- December 3, 1985: Initial Generator Synchronization
- September 14, 1987: RBS shut down for first refueling outage
- November 17, 1987: Routine refueling outage Linups on Nuclear Boiler Instrumentation (SOP-001) were being performed when operators identified the as found condition of 1RCS*V122 closed. They immediately identified this condition to their supervisors, the NRC, and the Plant Manager, and initiated a Condition Report.

SEQUENCE OF EVENTS

SEQUENCE OF EVENTS

- July 5, 1985: MWR 04128 written on valve RCS*V122 identifying missing valve packing bolts.
- August 13, 1985: SOP-001 (Nuclear Boiler Instrumentation) valve lineup performed. RCS*V122 not signed off - noted need to repair.

NOTE

The lineup had been revised via Temporary Change Notice (TCN) to remove every other item (they were being transferred to a separate I&C attachment).

- August 15, 1985: Shift Supervisor reviewed the lineup for completion, overlooking the failure to complete RCS*V122.
- August 29, 1985: RBS receives low power license. Unit enters Mode 5 the following day. Instruments from RCS*V122 NOT required operable.
- September 6, 1985: MWR 04128 released for work - No "Tracking LCO" written.

NOTE

The "Tracking LCO" system was written into procedures 8/31/85. Review and approval received 9/10/85. Distribution to manual holders was made 9/12/85.

- October 25, 1985 MWR 04128 signed off complete. No work instructions to check position of valve.
- October 31, 1985 Unit enters Mode 2. Instruments off of RCS*V122 required operable for first time.

NOTE

The Drywell Press instruments are unique in that the process provides a zero reading at all times - as would an isolated instrument. Therefore, "channel checks" throughout the cycle would not identify this condition as they would for other instruments.

ATTACHMENT - 1

VALVE LINEUP - NUCLEAR BOILER
INSTRUMENTATION
(SAFETY RELATED)DATE: 2-13-85

VALVE NUMBER	VALVE NAME (OR DESCRIPTION)	REQ'D POSITION	INITIALS		ACTUAL POSITION
			1st	2nd	
1RCS-V84 57' 48"	Upstream Root Low Side Root for the Following Instruments 1B21-LT-N095A - 1C33-LT-N004A 1B21-LT-N080A	OPEN	J	MUM	OPEN
1RCS-V85	Downstream Root Same description as 1RCS-V84	OPEN			
1RCS-V80 56' 14"	Upstream Root Hi Side Root for the Following Instruments 1B21-LT-N080C 1B21-LT-N081C 1C33-LT-N004C 1B21-LT-N073C 1B21-LT-N044C 1B21-LT-N073G Root for the following instrument 1B21-PT-N078C	OPEN	C	MUM	OPEN
1RCS-V81	Downstream Root Same description as 1RCS-V80	OPEN			
1RCS-V82 37' 41"	Upstream Root Low Side Root for the Following Instruments 1B21-LT-N080C 1C33-LT-N004C	OPEN	J	MUM	OPEN
1RCS-V83	Downstream Root Same description as 1RCS-V82	OPEN			
1RCS-V86 124' 15"	Upstream Root Low Side Root for the Following Instruments 1B21-LT-N081C 1B21-LT-N073G 1B21-LT-N073C	OPEN	C	MUM	OPEN
1RCS-V87	Downstream Root Same description as 1RCS-V86	OPEN			
1RCS-V122 105' 15"	Root for the Following Instruments 1B21-PT-N067G 1C71-PT-N050C 1B21-PT-N067C	OPEN			
1RCS-V123 105' 05"	Root for the Following Instruments 1B21-PT-N094A 1C71-PT-N050A 1B21-PT-N094E 1B33-PT-N050A	OPEN	J	MUM	OPEN
1RCS-V120 105' 18"	Root for the Following Instruments 1B21-PT-N094B 1C71-PT-N050B 1B21-PT-N094F 1B33-PT-N050B	OPEN	J	MUM	OPEN

TCN
85-182TCN
85-182TCN
85-182TCN
85-182M & L
Pump
to repair

ATTACHMENT - 1

PAGE 1 OF 4

SOP-001

REV. 0

PAGE 4 OF 18

ATTACHMENT - 1		VALVE LINEUP - NUCLEAR BOILER INSTRUMENTATION (SAFETY RELATED)		DATE: <u>8-13-85</u>	
VALVE NUMBER	VALVE NAME (OR DESCRIPTION)	REQ'D POSITION	INITIALS		ACTUAL POSITION
			1st	2nd	
1RCS-V118	Upstream Root Low Side Root for the Following Instruments 1833-FT-N037B 1833-FT-N037M 1833-FT-N037D 1833-FT-N037P 1833-FT-N037F 1833-FT-N037S 1833-FT-N037H 1833-FT-N037U 1833-FT-N037K 1833-FT-N037W	OPEN	J	MAN	OPEN
1RCS-V124	Downstream Root Same description as 1RCS-V118	OPEN			
1RCS-V20	Upstream Drain Valve Above Core Plate Pressure Instrument Line	CLOSED	J	MAN	CLOSED
1RCS-V2	Downstream Drain Valve Above Core Plate Pressure Instrument Line	CLOSED			

TEN
85-182

TEN
85-18

PERFORMED BY: [Signature] DATE: 8-14-85
[Signature] ^{MAN}
[Signature] 8-14-85

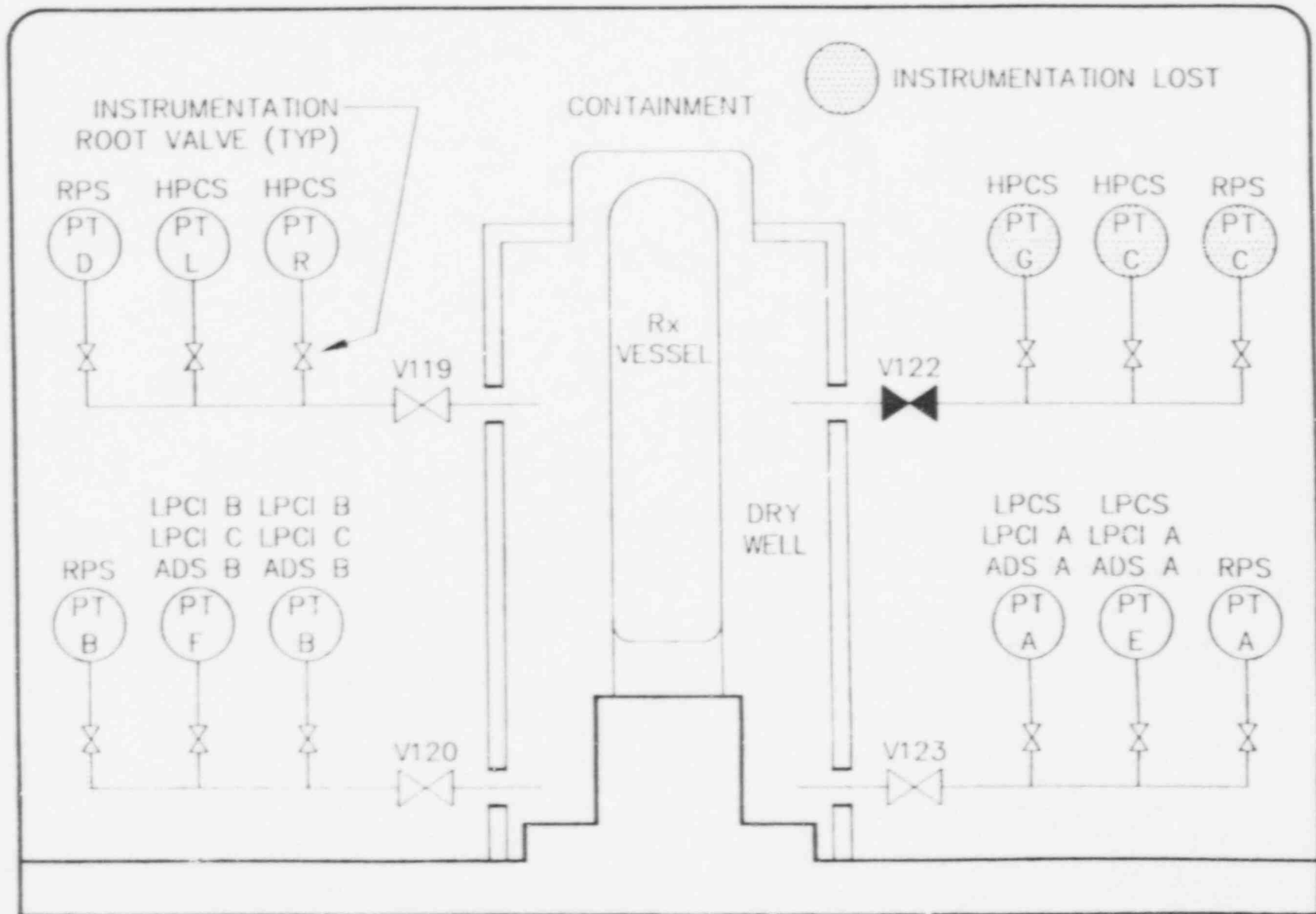
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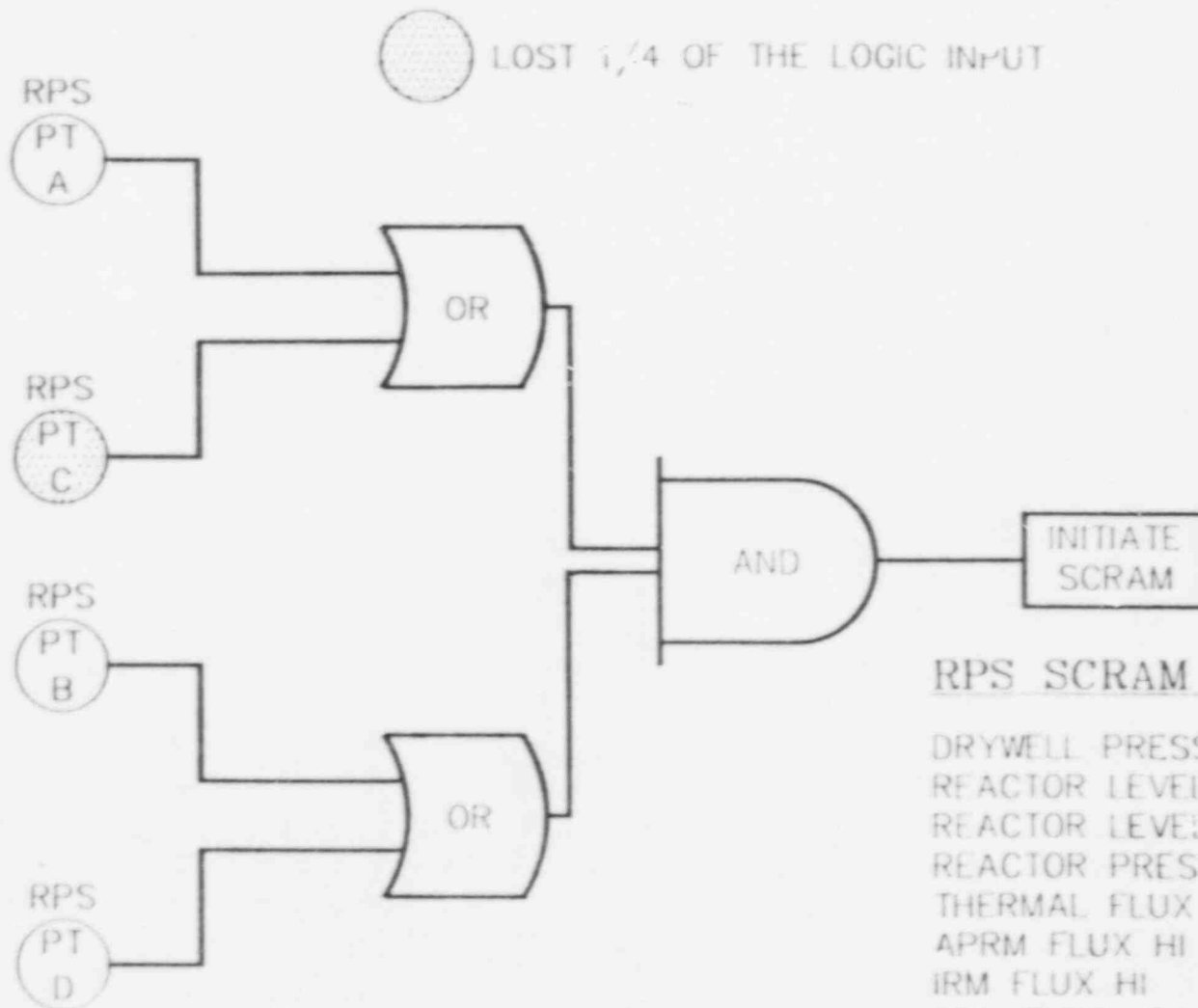
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S Y S T E M L O G I C

DRYWELL PRESSURE TRANSMITTERS



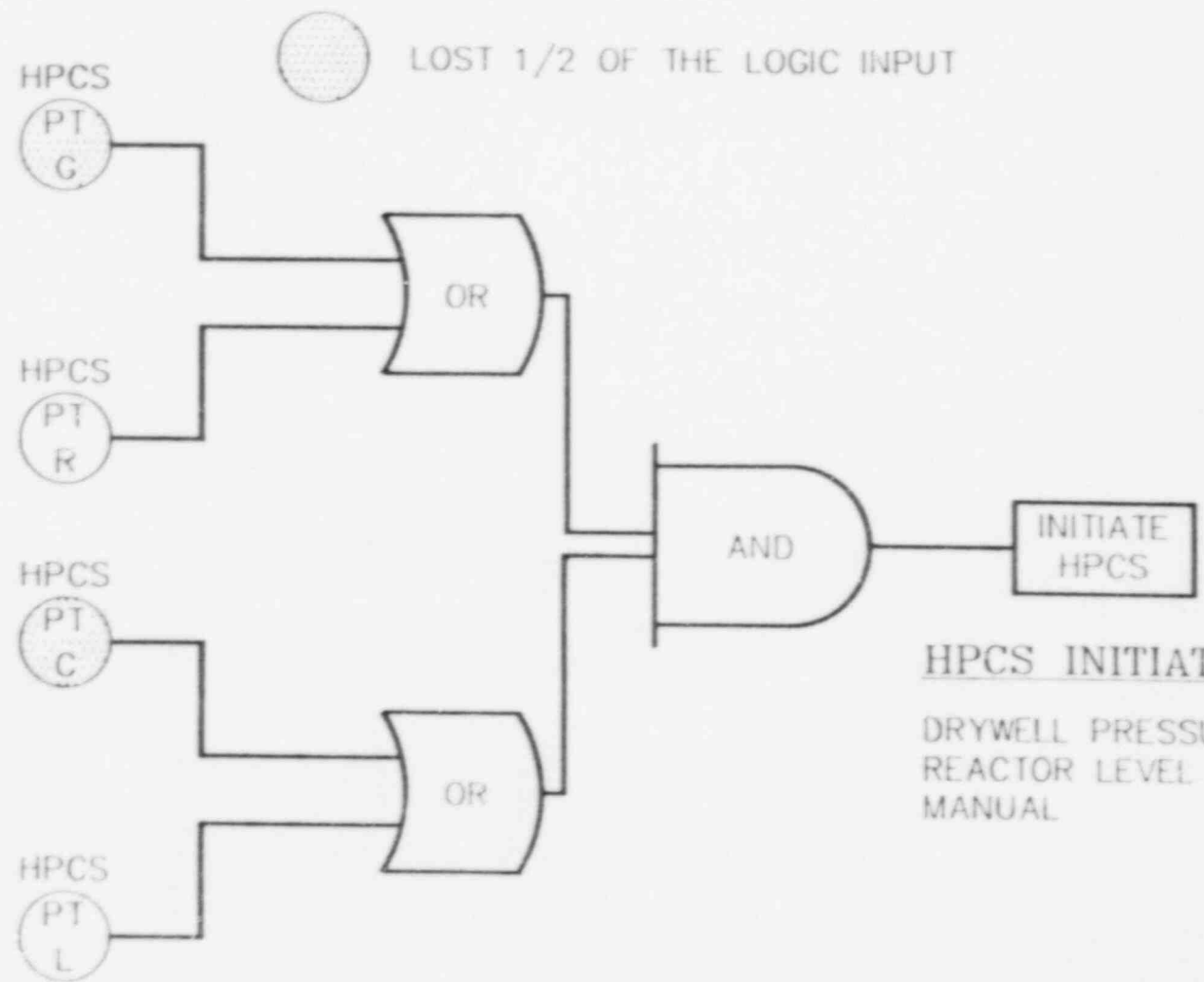
RPS SCRAM LOGIC — DRYWELL PRESSURE HI



RPS SCRAM SIGNALS

DRYWELL PRESSURE HI
REACTOR LEVEL LOW
REACTOR LEVEL HI
REACTOR PRESSURE HI
THERMAL FLUX HI
APRM FLUX HI
IRM FLUX HI
SRM FLUX HI
STEAMLINE RADIATION HI
STEAMLINE ISOLATION VALVES CLOSED
TURBINE STOP VALVES CLOSED
TURBINE CONTROL VALVES CLOSED
SCRAM DISCHARGE VOLUME LEVEL HI
MANUAL

HPCS INITIATION LOGIC – DRYWELL PRESSURE HI



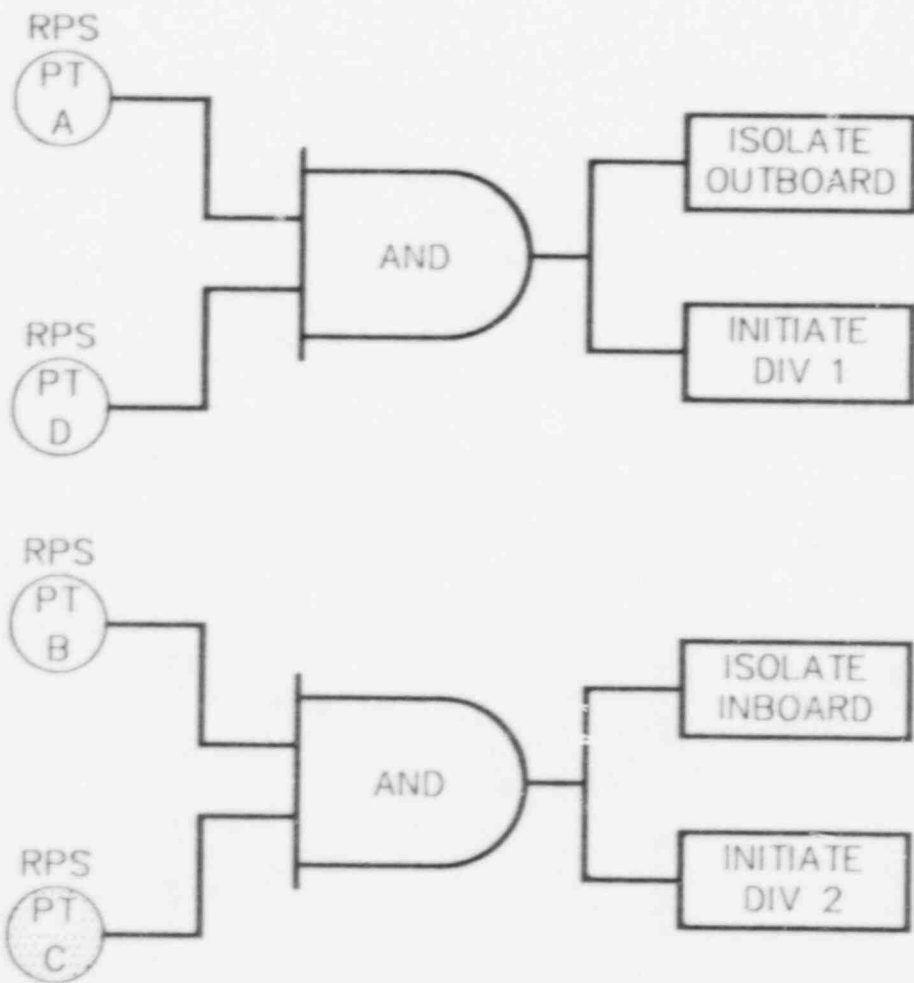
HPCS INITIATION SIGNALS

- DRYWELL PRESSURE HI
- REACTOR LEVEL LOW
- MANUAL

CONTAINMENT ISOLATION / DIVISIONAL INITIATION LOGIC — DRYWELL PRESSURE HI



LOST 1/2 OF THE LOGIC



CONTAINMENT ISOLATION

27 VALVES AND DAMPERS AFFECTED

NOTE: MSIV, RCIC, RWCU, RHR-SDC ISOLATIONS ALWAYS REMAIN FULLY FUNCTIONAL.

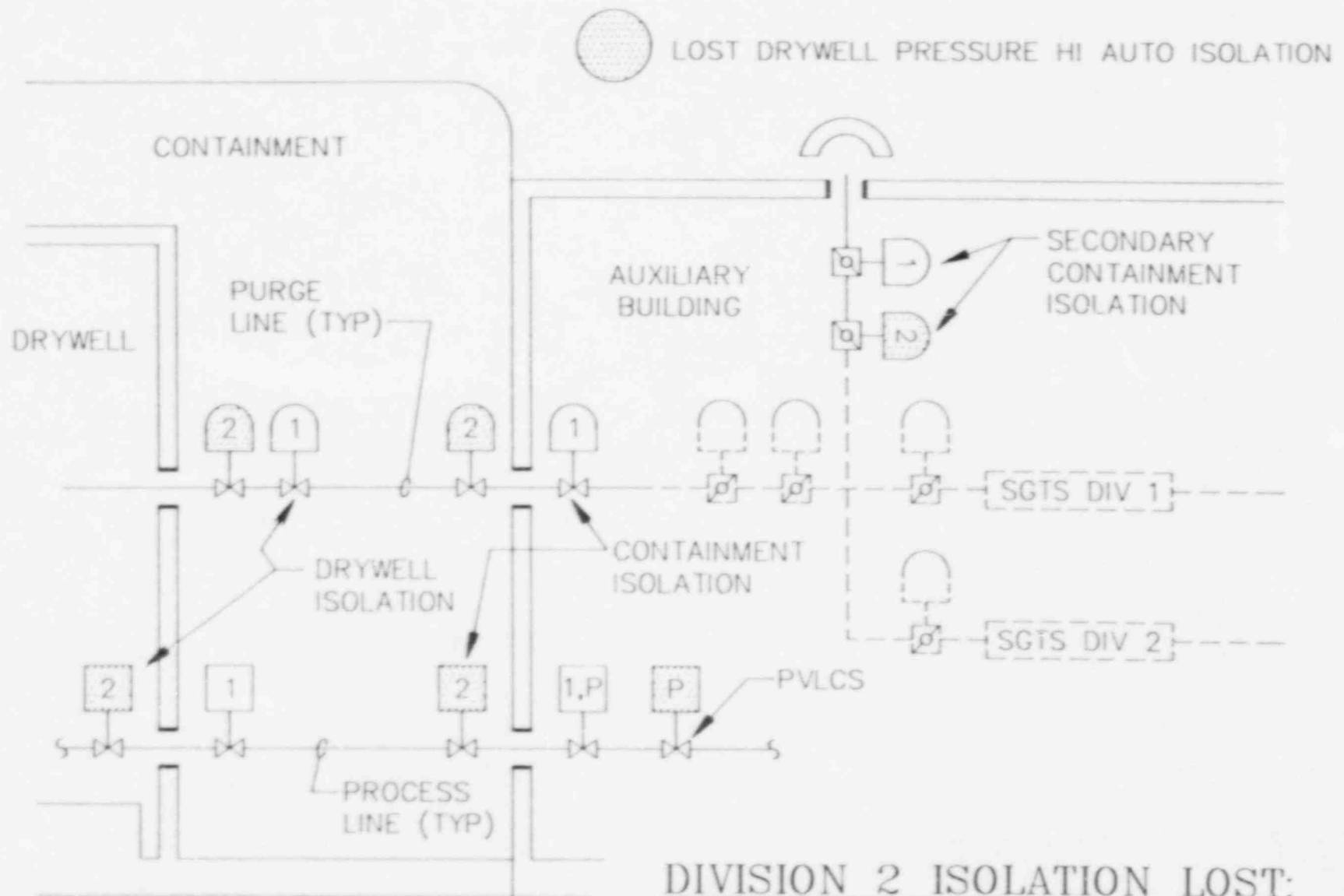
DIVISIONAL INITIATION

STANDBY GAS TREATMENT
ANNULUS MIXING
FUEL BUILDING EXHAUST FILTRATION
CONTAINMENT HYDROGEN ANALYZER
LOAD SHED
SYSTEM VALVES

ISOLATION/INITIATION SIGNALS

DRYWELL PRESSURE HI
REACTOR LEVEL LOW
MANUAL

TYPICAL ISOLATION VALVES AND DAMPERS



DIVISION 2 ISOLATION LOST:

- 8 DRYWELL ISOLATION VALVES
- 11 CONTAINMENT ISOLATION VALVES
- 6 SECONDARY CONTAINMENT ISOLATION DAMPERS
- 2 PVLCS VALVES

S A F E T Y S I G N I F I C A N C E

SAFETY SIGNIFICANCE ANALYSIS

High Drywell Pressure Automatic
Safety Functions Not Available with
Process Root Valve RCS*V122 Shut

<u>Function</u>	<u>Duration</u>	<u>Cause</u>
Reactor Scram	45 min/month	Required Testing
HPCS Initiation	90 min/month	Required Testing
Group of Containment Isolation Valves	90 min/month	Required Testing
STBY Gas Treat Initiation(*)	2 days 22 hrs(*) 90 min/month	Div 1 Train Inop Required Testing
Annulus Mixing Initiation(*)	10 hrs(*) 90 min/month	Div 1 Train Inop Required Testing
Fuel Bldg. Exh. Filt. (*) Initiation	10 days 18 hrs(*) 90 min/month	Div 1 Train Inop Required Testing
H ₂ Analyzers Initiation	5 days 5 hrs 90 min/month	Div 1 Train Inop Required Testing
Group of Load Shed Breakers	90 min/month	Required Testing

(*) The Division I isolation of the normal ventilation on High Drywell Pressure would have still initiated Division II of these systems even when Division I was inoperable.

SAFETY SIGNALS/SYSTEMS AVAILABLE

- RPS actuation (scram) on Drywell Pressure High was available via "A" and "B or D" channels.
- HPCS initiation on Drywell Pressure High was available via "R and L" channels.
- Containment isolation on Drywell Press High was available via "A and D" channels to outboard isolation valves.

NOTE

MSIV, RCIC steam supply, RWCU, and RHR-SDC isolations remained fully functional.

- Division I ventilation remained available for auto start on Drywell Pressure High via "A and D" isolation logics.
- Division II SBT, Annulus Mixing, and Fuel Building Exhaust Filtration would have received an auto start on normal ventilation low flow from its Division I isolation on High Drywell Pressure.
- During Loss of Offsite Power event, all initiations, isolations, and load sheds (prior to D/G tie to the bus) will occur on both divisions due to failed safe logic.
- At all times multiple redundant indication of actual Drywell Pressure existed.
- Two separate independent annunciators on Drywell Pressure High (below the 1.68 psi trip) were available at all times.
- 14 annunciators signaling one of four (typically - some were one out of two) Drywell Pressure High instruments tripped (at ≥ 1.68 psi) were available at all times.

CONTROL ROOM ANNUNCIATORS

<u>Alarm Panel Window</u>	<u>Title</u>	<u>Setpoint</u>
P601 16-B05	HPCS Initiation Drywell Pressure High	1.68 psid
P601 17-E01	LPCI & Div II D/G Initiation High DW Pressure	1.68 psid
P601 17-E03	LPCI & Div II D/G Initiation Auto or Manual	1.68 psid
P601 19-A09	Div II ADS Logic High Drywell Press Sealed In	1.68 psid
P601 19-B02	Div I ADS Logic High Drywell Press Sealed In	1.68 psid
P601 20-E06	Div I RHR System Actuated	1.68 psid
P601 21-B08	LPCS System Activated	1.68 psid
P601 21-E07	Div I LPCS Init Drywell Pressure High	1.68 psid
P680 04-B01	HPU A DW High Press Interlock	1.68 psid
P680 04-B07	HPU B DW High Press Interlock	1.68 psid
P680 05-B02	Drywell High/Low Pressure	+ 1.2, - 0.3 psid
P680 06-B02	NSSSS Init Drywell High Pressure	1.68 psid
P808 83-G04	CIMT/Drywell Diff Press High/Low	+ 1.08, - 0.18 psid
P808 84-G04	CIMT/Drywell Diff Press High/Low	+ 1.08, - 0.18 psid

CONTROL ROOM INDICATORS

P808	GMS-PR2A GMS-PR2B	
P819	GMS*ESX29A	
P842	GMS*ESX29B	
P625	B21*N667G) B21*N667C)	RCS*V122 isolated
P618	B21*N694B B21*N694F	
P629	B21*N694A B21*N694E	
P693	C71*N650C)	RCS*V122 isolated
P691	C71*N650A	
P692	C71*N650B	
P694	C71*N650D	

411 RPU CAUTION CRITICAL PLANT VARIABLES

CNTMT ALARM

CONTAINMENT

DESIGN 15.0
PRESS 0.1 PSIG

OPER HI 90
TEMP 77 °F

OPER HI 20-0
LVL 12 FT 16 IN
OPER LO 19-6

SUPPRESSION
POOL

DRYWELL

OPER HI 1.7
PRESS 0.2 PSIG

OPER HI 140
TEMP 80 °F

RPU

SRV LIFT 1103
PRESS 1 PSIG
100% BPV 995

TRIP HI 51
LEVEL 83 IN
SCRAM LO 10

POWER 0 %
APRM DNSCL 5

NO SCRAM

DG
NOT OPER

MSIV
SHUT

GROUP
ISOL

SRV
SHUT

OPER HI 95
TEMP 74 °F

SUPPRESSION
POOL

RIVER BEND 8-DEC-1987 10:20:58

C O R R E C T I V E A C T I O N

CORRECTIVE ACTIONS
HARDWARE RELATED

- ' Valve 1RCS*V122 correctly positioned open.

- ' 100% of all Safety Related system valve lineups (a total of 11,708 safety related valves) are being performed prior to start-up. This includes an independent verification of proper valve position.

- ' All MWO job plans for work on any valve require positioning prior to completion.

- ' All process root valves supplying instruments which normally read zero will now be sealed open and verified open at each refueling outage.

- ' All four Drywell Pressure instrument penetrations and instrument tubing were verified open and free of obstruction during the Drywell Bypass Test.

CORRECTIVE ACTIONS
ADMINISTRATIVE CONTROL

- ' The "Tracking LCO" system was implemented to ensure this type of known problem is not overlooked.
 - ' Initially implemented in September, 1985.
 - ' Has worked very effectively since then.
- ' Operations performs lineup verification on ECCS and DG systems weekly, as opposed to the Tech Spec required monthly frequency. QA is continuing to randomly audit these system lineups.
- ' When major work is performed on systems, complete lineups are done prior to return to service. Each cycle, 100% of all safety related systems' lineups are performed.
- ' Additional Operations management review of completed valve lineups required to assure adequacy of problem disposition. Also serves as independent check on completion.
- ' QA is auditing 100% of the completed safety related systems' lineup sheets.

S U M M A R Y

SUMMARY

- Root cause of occurrence is personnel oversight.
 - Contributing cause was inadequate Maintenance work job plan.
- This event is distinctly different from other "mispositioned valve" events previously reported:
 - Operations personnel involved, not I&C.
 - In previous events, documentation indicated the valve was independently verified open. Corrective action addressed inadequate independent verification practices. In this event, documentation was incomplete and did not support the valve being open. Corrective action adds an independent review of documentation for completion.
- The safety significance of this event was:
 - Loss of a group of isolations on High Drywell Pressure for brief periods of surveillance testing
 - Loss of scram signal on High Drywell Pressure for brief periods of surveillance testing
 - Loss of HPCS initiation on High Drywell Pressure for brief periods of surveillance testing
 - Loss of Division II Containment Hydrogen monitor initiation on High Drywell Pressure
 - Loss of Division II load shed of non-safety related loads
- This was mitigated by:
 - All outboard isolations were operable.
 - All MSIV, R&ACU, RCIC steam supply, and PWR-shutdown cooling isolations were operable.
 - Several other automatic signals existed for these systems.
 - Manual initiation/isolation capability was available.
 - Multiple, diverse indication and alarm functions on Drywell Pressure were available.
 - Operator action is clearly required by ARP, AOP, EOP, to initiate appropriate actions in the event of High Drywell Pressure event.
- Corrective actions included:
 - Additional reviews of completed lineups (including QA audits)
 - Sealing all process root valves to normally zero reading instruments
 - Implementation of a "Tracking LOO" system
- Commendation of operators involved in identifying the problem will ensure no negative feedback which could prompt a less than complete accounting of these types of events. It is our goal to maintain the highest level of professionalism. To attain this, complete unhindered access to and solution of even the smallest of problems is a must.
 - To further this goal, River Bend Operations is developing a Professional Code of Conduct.

MEMORANDUM

TO: Gene Bush
Dave Looney

November 19, 1987

FROM: D. W. Williamson

SUBJ: Commendation for Professional Attitudes

During the performance of the system line up for SCP-0001 you discovered closed the process root valve for one channel of Drywell High Pressure instrumentation. Upon discovery you correctly repositioned the valve, immediately notified your supervision and initiated a Condition Report.

The discovery of this mispositioned valve could have easily remained "undiscovered" by repositioning and not reporting it. However, the actions you took are worthy of commendation in that they exemplify the professionalism, integrity and attention to detail necessary to bring the quality of operations at River Bend to the highest standards.

Williamson

D. W. Williamson
Operations Supervisor

DW:sb

cc: P. D. Graham
T. F. Plunkett
J. C. Deddens
Personnel File
OPS-87-425

KCTFP
PDG
DWW

To Gene & Dave,

I want to add my personal
commendation to that one from Dan.
Above all we must maintain
the absolute integrity of an operation
if we are to keep a safe plant &
continue to enjoy the confidence
of the public, all, I do & one
our management. Each of you
has contributed significantly to
that goal. Thanks,
Jim Deddens
11/30/87