07.234.91

NINE MILE POINT NUCLEAR STATION UNIT #2

OPERATING PROCEDURE

PROCEDURE NO. N2-OP-13

REACTOR BUILDING CLOSED LOOP COOLING

DATE AND INITIALS

APPROVALS	SIGNATURES	REVISION 0	REVISION 1	REVISION 2
Superintendent Operations NMP Unit #2 M.D. Jones			8/18/86	1/15/87
Station Superintendent NMP Unit #2 R.B. Abbott	RB Abbott	4/2/86 RBA	8/18/86 RBA	1/15/87 RBA
General Superintendent Nuclear Generation T.J. Perkins	TJ Perkins	4/7/86 TJ P	8/18/86 TJ P	

FOR INFORMATION

Summary of Pages (Cont'd on Cover Sheet 2)

Revision 2 (Effective 1/20/87)

Page	Date
5,10,11,17,20,52,54, 55,57-64,66,67,70-72 ii	December 1986 February 1987 (Reissue)

Periodic Review 1/16/91 No Changes

NIAGARA MOHAWK POWER CORPORATION
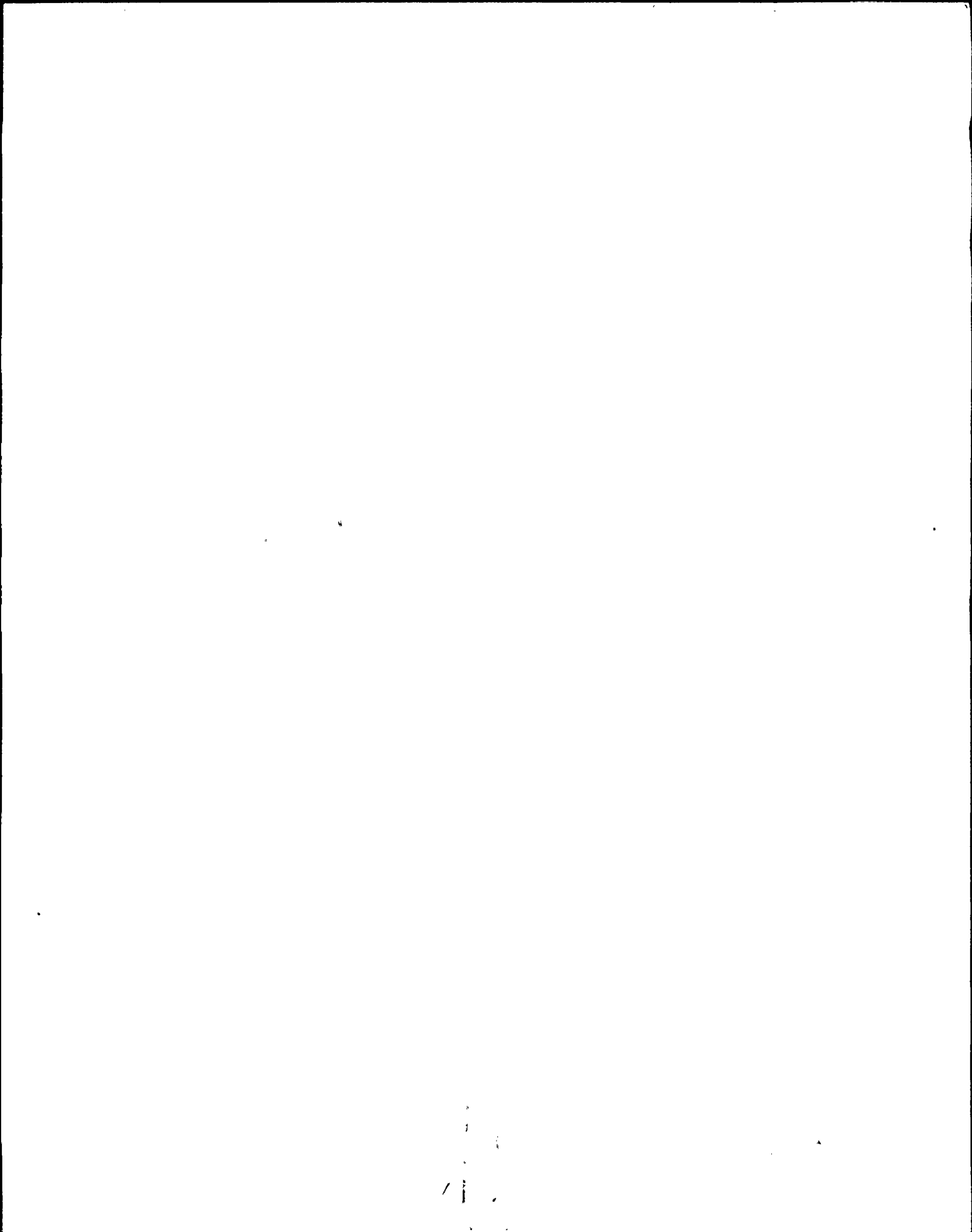
CHANGES PER SECTION 11.5 AP-2.0   W. Hanlogan   2/24/87
                                  SIGNED   DATE

THIS PROCEDURE NOT TO BE USED AFTER (January 1993 SUBJECT TO PERIODIC REVIEW.

5/4/88

NINE MILE POINT NUCLEAR STATION UNIT #2

OPERATING PROCEDURE

PROCEDURE NO. N2-OP-13

<u>REACTOR BUILDING CLOSED LOOP COOLING</u>
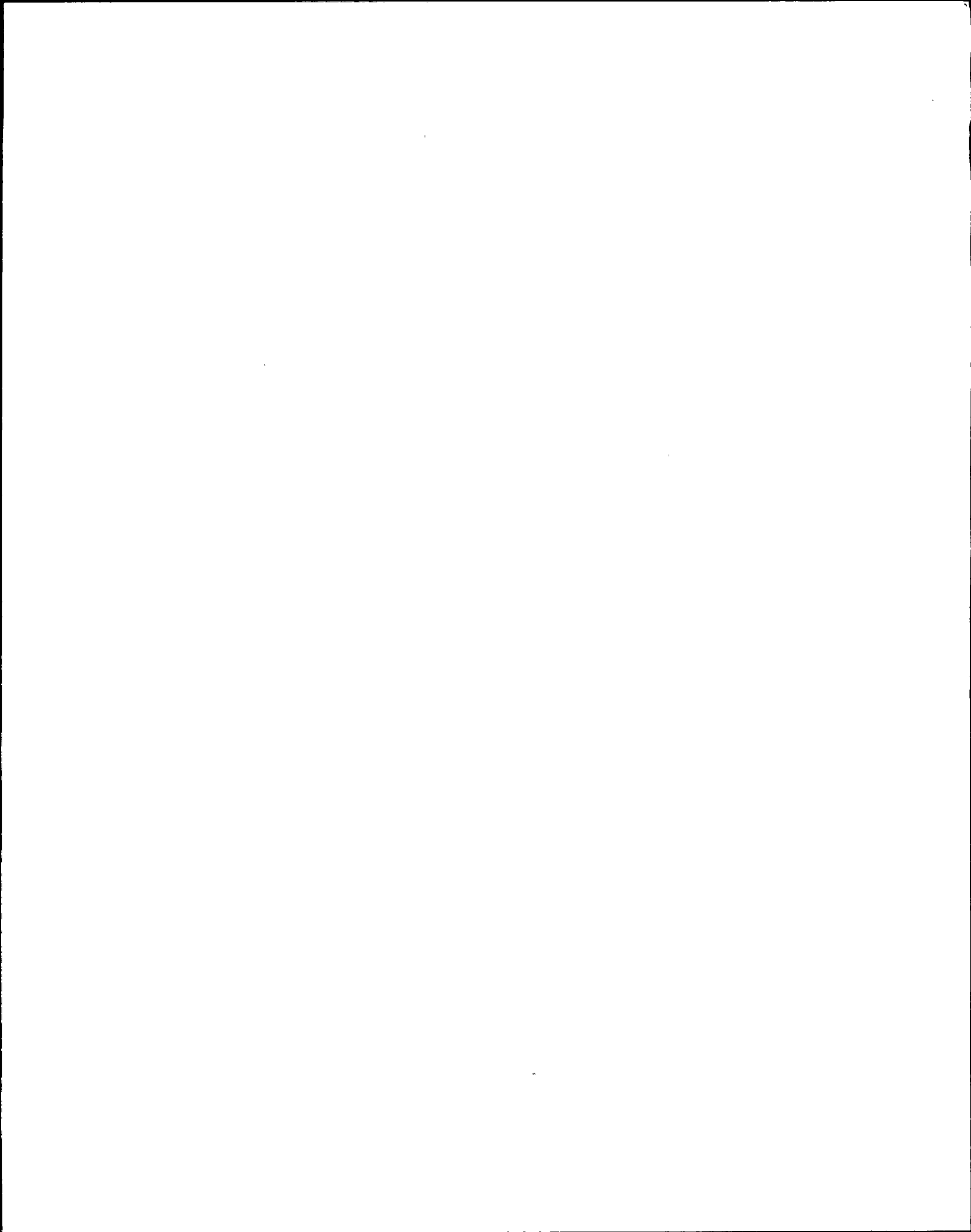
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21	April 1987 (TCN-6)
1	November 1987 (TCN-11 and TCN-12)
65	February 1988 (TCN-13 and TCN-14)
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3,21a,56,68,69	January 1991 (TCN-25 and Publication Change *3)
22,25,28-32,34,35, 40-46,49-51,53	January 1991 (Publication Change *4)
i	January 1991 (TCN-27)
2,33,36,37,39	January 1991 (TCN-28)
6-9,12	April 1991 (TCN-29)
19,77,127	April 1991 (TCN-30 through TCN-32)
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47,48	July 1991 (PCE 16080)
14	August 1991 (PCE 16455)

*Changes per Section 11.5, AP-2.0 _____   _____
                                          Signed   Date

REACTOR BUILDING CLOSED LOOP COOLING

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LSK-9-1J   Reactor Building Closed Loop Cooling
LSK-9-1K   Reactor Building Closed Loop Cooling
LSK-9-1L   Reactor Building Closed Loop Cooling
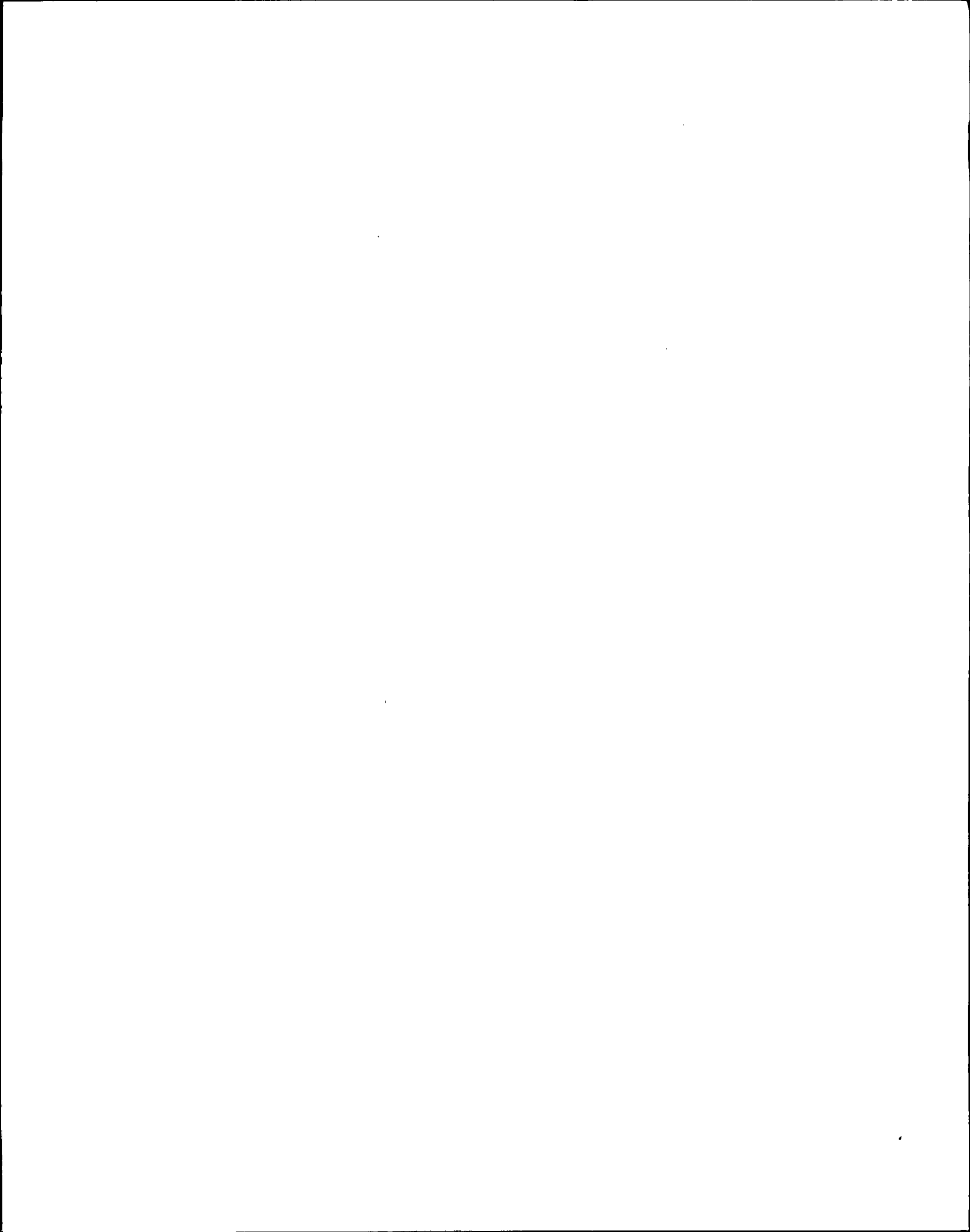LSK-9-1M   Reactor Building Closed Loop Cooling

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N/A

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SSM S106-00011

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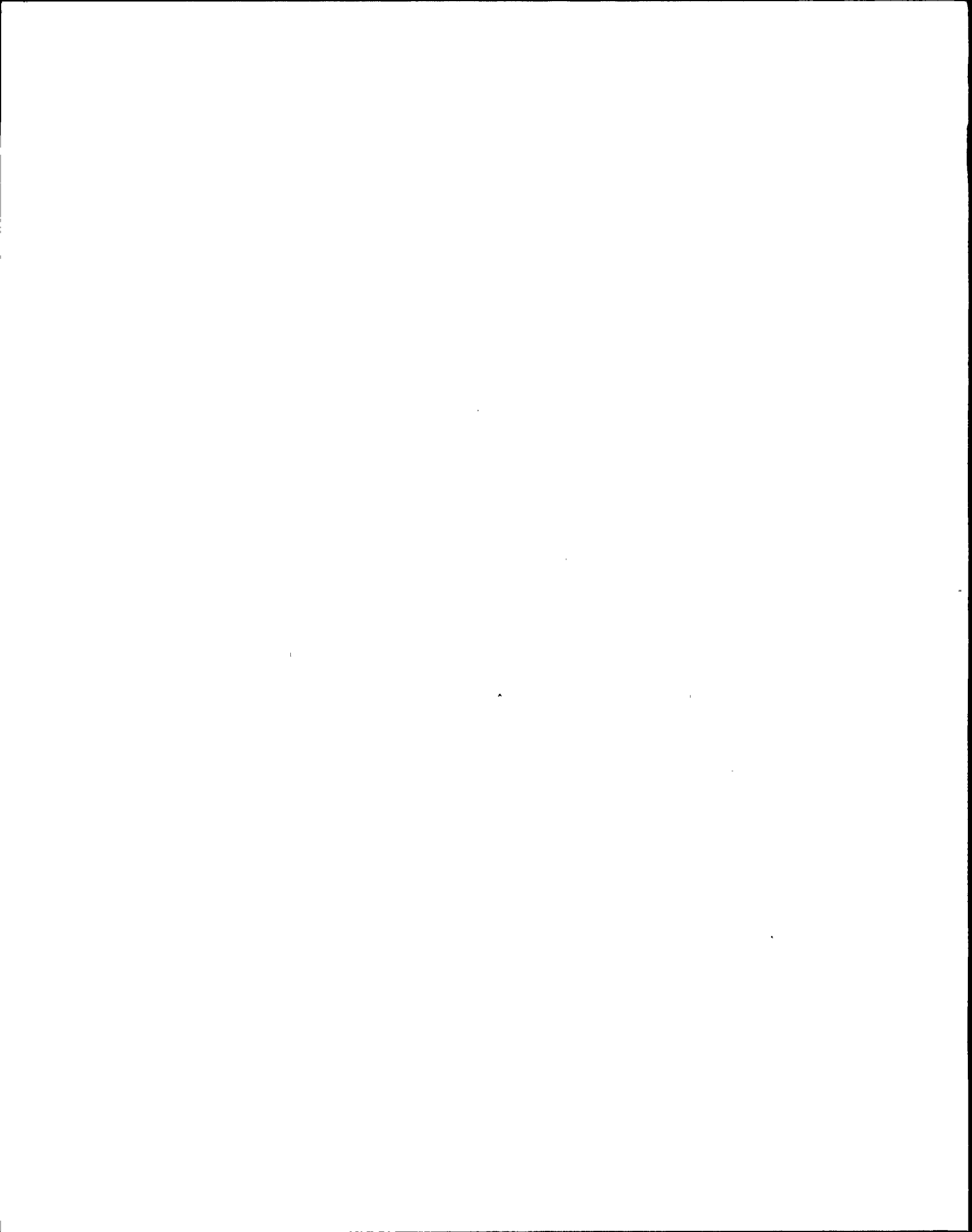
REACTOR BUILDING CLOSED LOOP COOLING

A. TECHNICAL SPECIFICATION REQUIREMENTS

Section 3/4.6.3 Primary Containment Isolation Valves

B. SYSTEM DESCRIPTION

The Reactor Building Closed Loop Cooling (RBCLC) Water System provides cooling water to auxiliary equipment and systems during normal plant operation, shutdown, and refueling. The RBCLC System is designed to remove 71.7×10^6 BTU/HR from the components it serves. The purpose of the Closed Loop System is to provide an intermediate barrier between systems containing radioactive contaminants and the service water system. This precludes a direct release of radioactivity to the environment.

Cooling water from the various components is returned to two RBCLC heat exchangers (third heat exchanger is in standby). The heat gained by the RBCLC water is transferred to the service water system in the heat exchangers. The heat exchangers are vertically mounted, single pass shell and tube type, each rated at 50% system capacity. RBCLC water flows through the shell side of the heat exchangers and service water flows through the tubes.

The RBCLC system temperature is controlled by temperature control valve 2CCP-TV108 located downstream of the heat exchangers. The temperature control valve is a single pneumatic controller connected by a tee-linkage to two butterfly valve assemblies, one valve is in the heat exchanger bypass line, and the other valve is located in the common heat exchanger discharge header. The linkage is arranged such that as one valve assembly opens, the other shuts and vice versa. The operator for 2CCP-TV108 receives a signal from 2CCP-TE108 which corresponds to heat exchanger discharge header temperature. The operator then positions 2CCP-TV108 to maintain the RBCLC supply water temperature at 86°F. The valve in the heat exchanger discharge header will fail open on loss of air, and the valve in the heat exchanger bypass line fails closed (maximum cooling). System temperature may be lowered during outages to cool the drywell for personnel comfort and safety. | TCN-11

The discharge from the heat exchangers is piped to the suctions of the RBCLC booster pumps, 2CCP-P3A, B, C. Two of the three RBCLC booster pumps are normally in operation with the third pump in standby. The pumps are single stage horizontal centrifugal pumps. Each pump is rated at 50% system capacity (3370GPM at 110 Ft. TDH). The RBCLC booster pumps discharge into a common header that supplies the RBCLC pumps, 2CCP-P1A, B, C. A RBCLC booster pump will auto start when the control switch is in auto and any one of the following conditions exist:

1. Motor overcurrent on either of the two other pumps or

2. Low discharge header pressure (under 60 psig).

The RBCLC Booster Pumps will trip on sustained bus undervoltage, motor electrical fault or low suction pressure (under 5 psig).
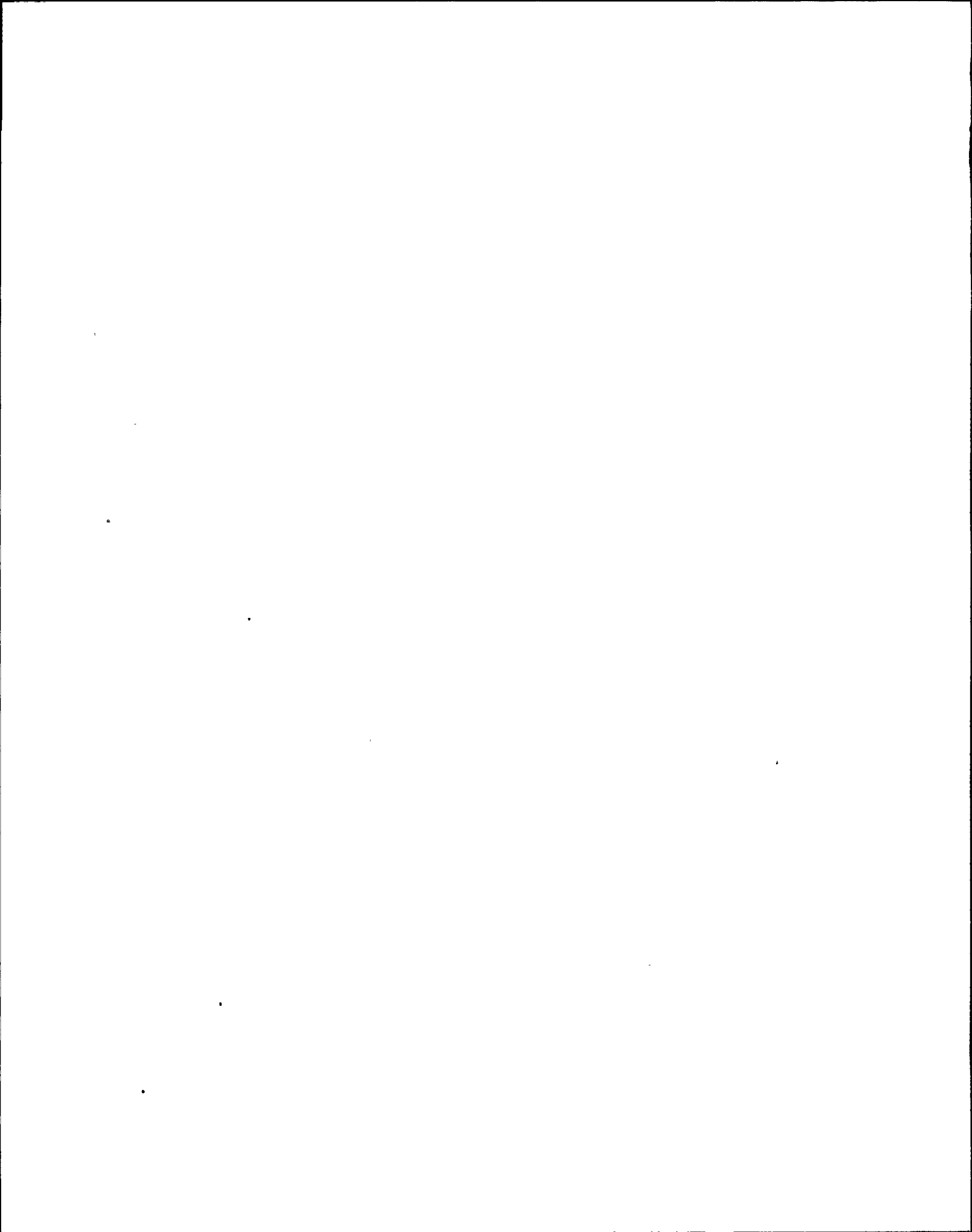
The RBCLC pumps take a suction from the common header supplied by the booster pumps. Normally there are two RBCLC pumps in service and the remaining pump is in standby. The pumps are single stage horizontal centrifugal pumps. Each pump is rated at 50% system capacity (3370 GPM at 110 Ft. TDH). An expansion tank is connected to the pump suction header and serves as a surge volume and source of makeup water. The RBCLC pumps discharge into a common header which branches into three headers to supply cooling water to the various system loads. A RBCLC pump will auto start when the control switch is in auto and any one of the following conditions exist:

1.   Motor overcurrent on either of the two other pumps or

2.   Low discharge header pressure (under 25 psig). |TCN-28

The RBCLC pumps will trip on sustained bus undervoltage, motor electrical fault or low suction pressure (under 0 psig).

A subsystem of the RBCLC system is the instrument air compressor cooling loop. Two RBCLC instrument air compressor cooling water pumps, 2CCP-P2A and B, circulate cooling water through the shell side of the two instrument air compressor closed loop cooling heat exchangers and the instrument air compressor coolers. The heat picked up by the subloop cooling water is rejected to the RBCLC system water passing through the tube side of the two instrument air compressor closed loop cooling heat exchangers. The subloop has an expansion tank which serves as a surge volume and source of makeup water from the makeup water system. The instrument air compressor closed loop cooling pumps are single stage horizontal centrifugal pumps, each rated at 125 GPM at 135 Ft. TDH. The pumps will auto start when the control switch is in auto and a low discharge flow condition exists. The pumps will trip on motor overload or low suction pressure (under 4 psig).

For the purpose of maintenance, each component served by RBCLC is provided with inlet and outlet manual blocking valves. The outlet block valve can be throttled to balance system flow. Components located within primary containment (recirc. pump motor coolers and the drywell coolers) have their associated RBCLC supply and return lines equipped with containment isolation valves.

The RBCLC supply and return lines for the reactor recirc. pump coolers, spent fuel pool cooling heat exchangers and the residual heat removal pump seals have interconnection with the service water system for a backup source of cooling water. The supply and return lines are equipped with motor operated valves to isolate these components from the RBCLC system when they are being cooled by service water.
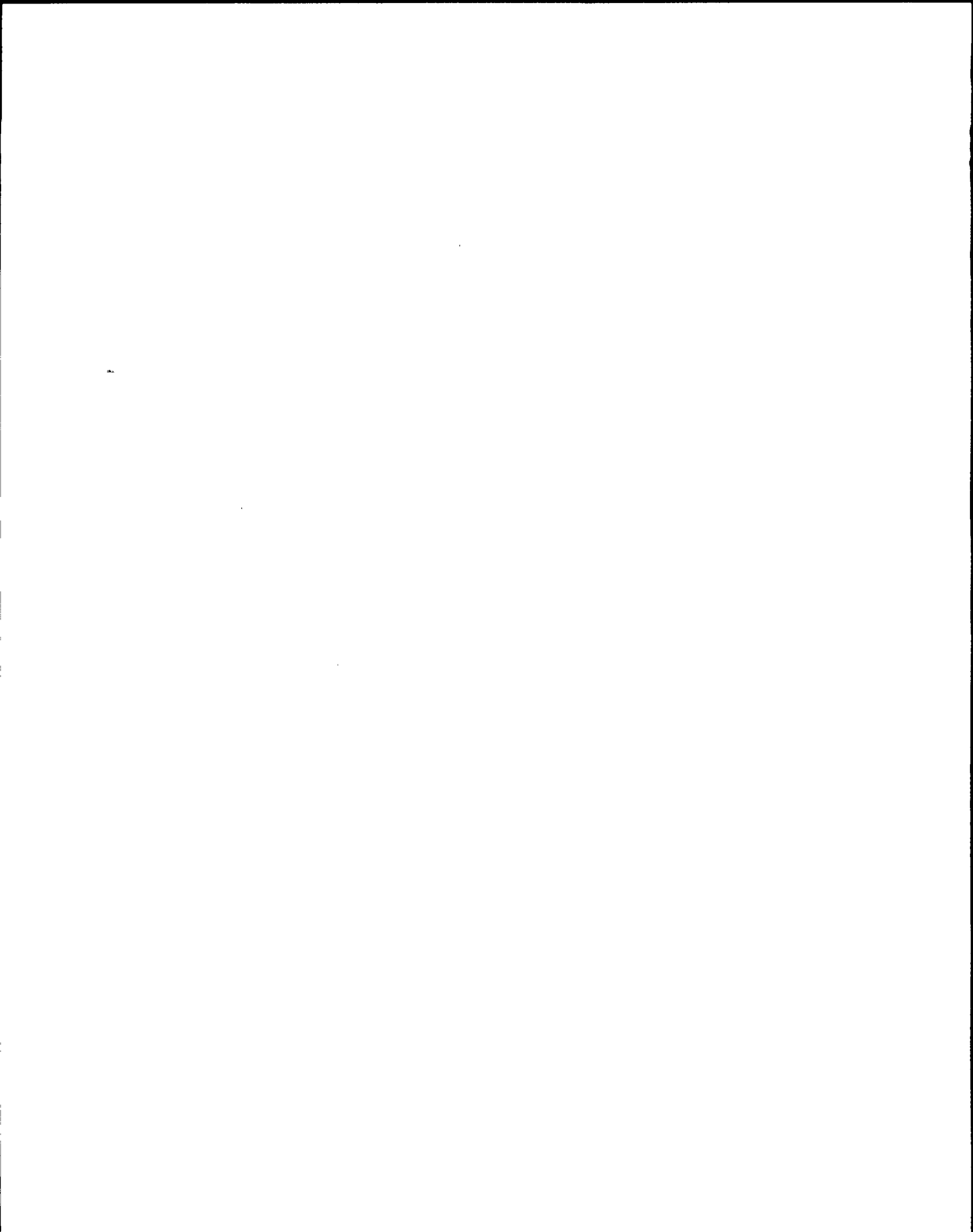
The RBCLC supply to the reactor water cleanup non-regen heat exchanger is equipped with a bypass line containing flow control valve 2CCP-FV126. In the event system flow increases through the heat exchanger, the pressure drop across the heat exchanger would increase and result in cavitation at the outlet of the heat exchanger. The bypass flow control valve eliminates this condition by routing any excess flow around the heat exchanger. The flow control valve maintains flow through the heat exchanger at a maximum of 1430 GPM.

Makeup water is supplied automatically from the makeup water system by the operation of expansion tank makeup valves 2CCP-AOV120 (TK1) and 2CCP-AOV180 (TK2). These valves open on low level in the respective tanks and close when the level returns to normal.

The RBCLCW to Drywell Unit Coolers Containment Isolation Valves 2CCP*MOV124, MOV265, MOV122 and MOV273 will automatically close on either:

1. Divisional LOCA Isolation Signal, with the Drywell Unit Clr Division I (II) LOCA override switches RESET at P873, or

2. Division I (II) Drywell UC Clg Wtr Manual Isolation switch in ISOLATE position (amber light energized) at P602.

The LOCA isolation signal only can be overridden using the two divisional Drywell Unit Clr Div I (II) LOCA override switches at P873, to allow RBCLC water to be supplied to the drywell unit coolers during high drywell pressure conditions (post scram pressurization).

C. **PLANT OPERATING REQUIREMENTS**

    1.0   **Systems**

    1.1   Instrument and Service Air System   N2-OP-19

    1.2   Normal A.C. Distribution   N2-OP-71

    1.3   Service Water System   N2-OP-11

    1.4   Makeup Water Storage and Transfer   N2-OP-16

    1.5   Normal DC Distribution   ·N2-OP-73A

    1.6   Primary containment Isolation System   N2-OP-83

    1.7   Radiation Monitoring System   N2-OP-79
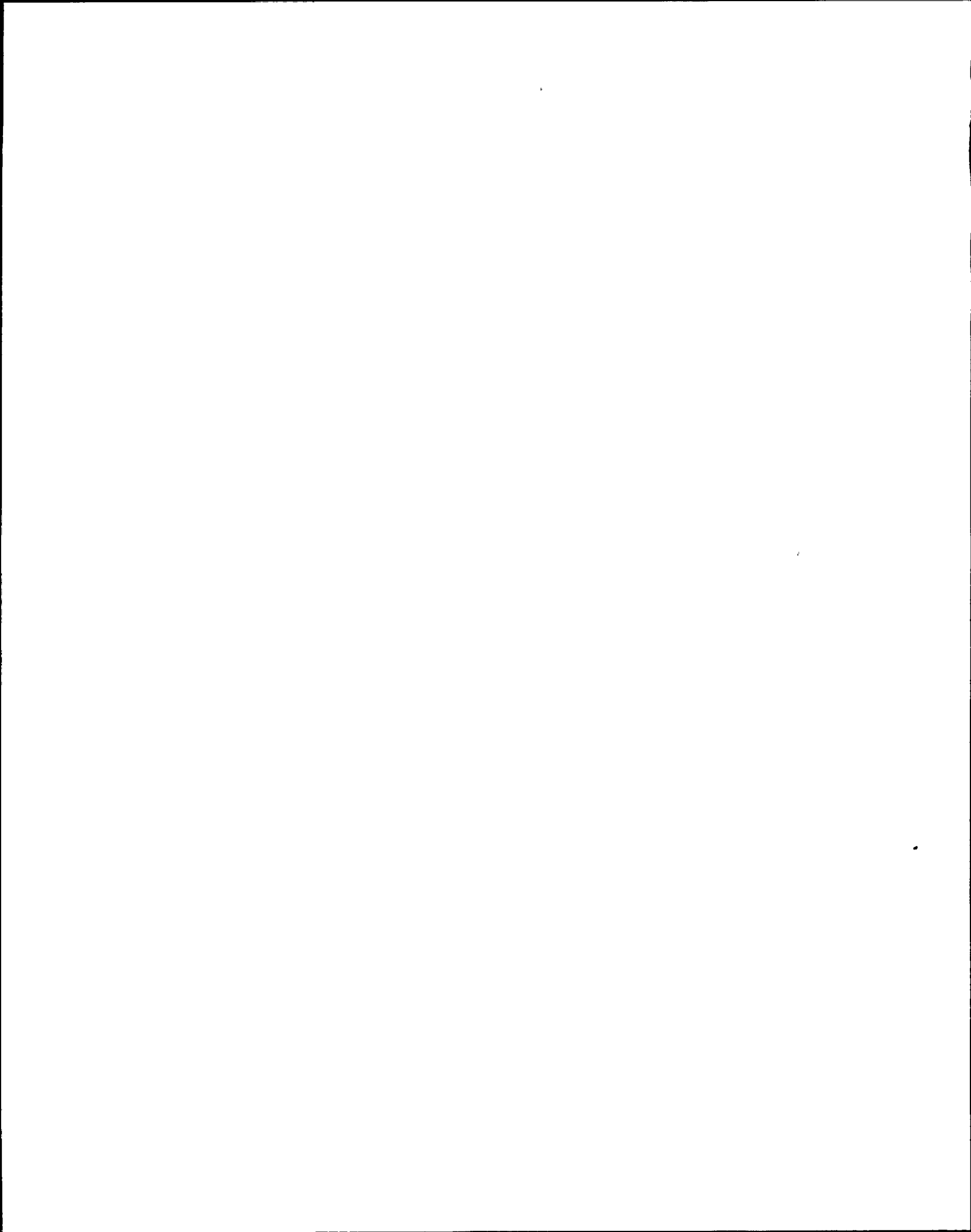
D. PRECAUTIONS/LIMITATIONS

1.0   Observe the following starting limitations on the RBCLC pump motors:

   a.   Two starts in succession from ambient temperature after which a 60 minute wait is required prior to subsequent start attempts.

   b.   One start from rated temperature (established after 30 minutes run time), after which a 60 minute wait is required prior to subsequent start attempts.

2.0   If the service water system has been used as the cooling water source, the components cooled by the service water must be flushed prior to restoring RBCLC as the source of cooling water.

3.0   When the RBCLC pumps are not required to be operating or in standby, the control switches must be placed in the pull to lock position to prevent an automatic pump start.

4.0   Ensure radiation monitors (2CCP-RE131 and RE115) are in operation prior to placing CCP in service. If not, contact Chemistry and Radiation Protection for possible sampling. The CCP System does not automatically isolate on high radiation.

5.0   Ensure the RBCLC loads are properly flow balanced by positioning the associated balance valve to the correct position in the valve lineup.

6.0   To prevent overpressurizing RHR pump seal coolers, do not shut all RBCLC Booster Pump Discharge Valves with a RBCLC pump running.

7.0   To prevent exceeding drywell penetration NDT requirements, do not permit RBCLCW fluid temperature to drop below 70°F.

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E. STARTUP PROCEDURES

1.0   Startup From No RBCLC Pumps or RBCLC Booster Pump Running

1.1   Place RBCLC Pump P1A, P1B and P1C control switches in "PULL-TO-LOCK," at P601.

1.2   Place RBCLC Booster Pump P3A, P3B and P3C control switches in "PULL-TO-LOCK," at P601.

1.3   Verify Power Supply Lineup per Table II.

1.4   If the RBCLC Expansion Tank TK1 has been drained or maintenance performed on the system, perform Fill and Vent per this procedure.
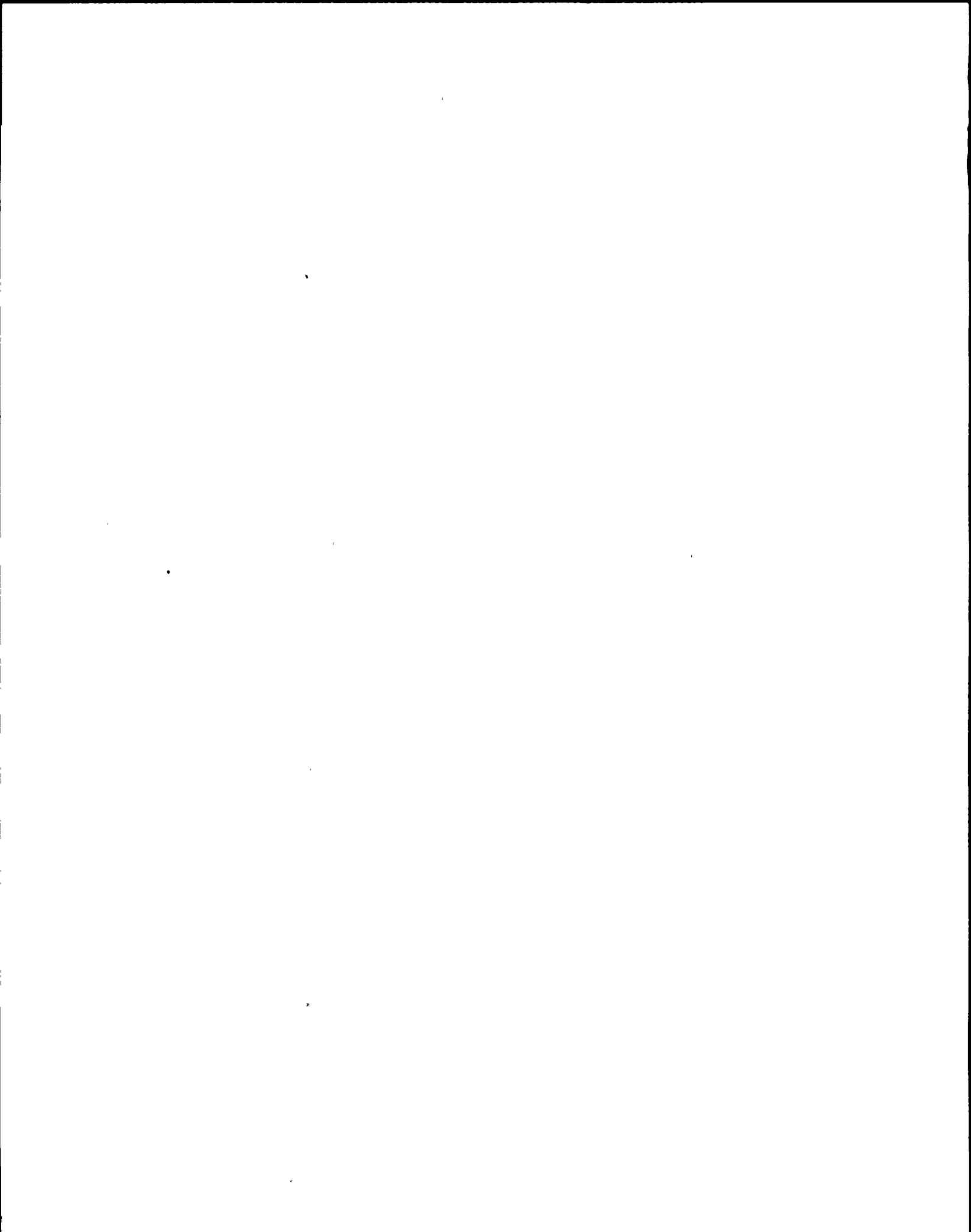
1.5   Verify Valve Lineup per Table I, with the following exceptions:

a.   For the initial RBCLC Pump P1A(B)(C) to be started, open P1A(B)(C) Disch. Stop Check 2CCP-V7(V8)(V9), approximately 2 turns.

b.   For the initial RBCLC Booster Pump P3A(B)(C) to be started, open P3A(B)(C) Disch. Stop Check, 2CCP-V789 (V790) (V791), approximately 2 turns.

NOTE: Two RBCLC Heat Exchangers are normally in service with one in standby.

1.6   Perform the following, per Section F of this procedure:

a.   Place two RBCLC Heat Exchangers in service.

b.   Remove one RBCLC Heat Exchanger from service.

1.7   Verify Controller Lineup per Table III.

NOTE: RBCLC Pump will auto start on low discharge pressure when a control switch is taken out of "PULL-TO-LOCK."

1.8   Start RBCLC Pump P1A(B)(C), at P601.

1.9   Slowly open P1A(B)(C) Disch. Stop Check, 2CCP-V7(V8)(V9), to pressurize system.

1.10   Start RBCLC Booster Pump P3A(B)(C), at P601.

1.11   Slowly open P3A(B)(C) Disch Stop Check, 2CCP-V789 (V790) (V791), to pressurize system.

1.12   Verify System Operating Status Checks per this procedure.

1.13   Place the non-running RBCLC Pump P1A(B)(C) control switches in normal after "STOP."

1.14   Place the non-running RBCLC Pump P3A(B)(C) control switches in normal after "STOP."

1.15   Start Instrument Air Compressor Cooling Loop, as required, per this procedure.

2.0   Fill and Vent

2.1   Verify RBCLC Pump P1A, P1B and P1C control switches in "PULL-TO-LOCK," at P601.

2.2   Verify RBCLC Pump P2A, P2B and P2C control switches in "PULL-TO-LOCK," at P851.
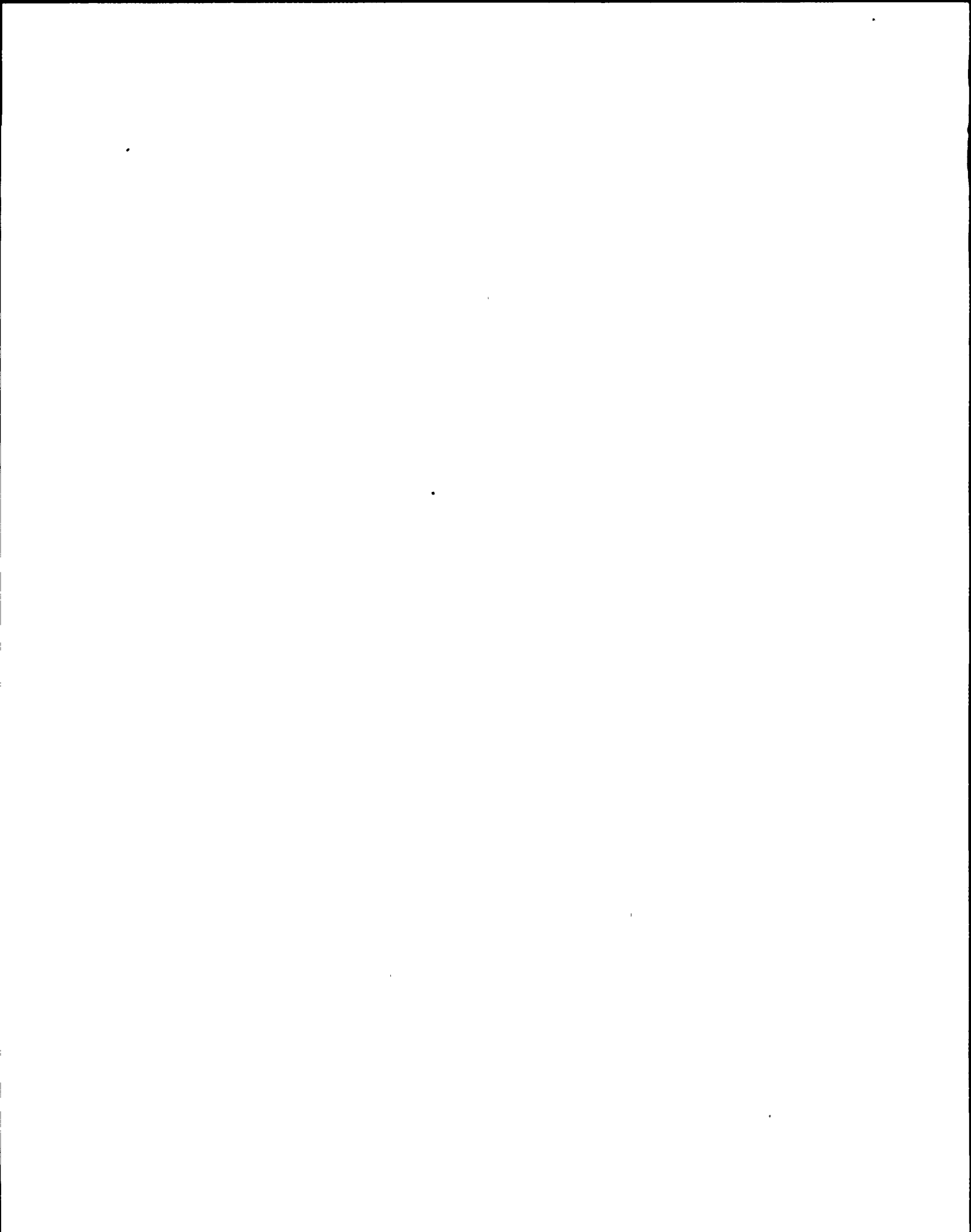
2.3   Verify RBCLC Booster Pump P3A, P3B and P3C control switches in "PULL-TO-LOCK," at P601.

2.4   Verify Valve Lineup per Table I.

2.5   Verify Makeup Water Storage and Transfer System in service per N2-OP-16.

2.6   Verify RBCLC Expansion Tank TK1 Level Control 2CCP*AOV120, maintaining Expansion Tank level 58-70 inches, as indicated locally on 2CCP-LI121.

NOTE: RBCLC Expansion Tank level does not provide enough pressure to unseat RBCLC Pump discharge stop check valves. Therefore a hose connection is needed to fill the pump discharge piping and downstream components.

NOTE: Issuing yellow holdout for mechanical jumpers provides for SSS notification, documentation, and Independent Verification to satisfy AP-6.1 Exclusion requirements of Step 1.3.1.

2.6.1   Issue yellow holdout to SSS for mechanical jumpers. Independent Verification of tag placement is required. SSS shall sign holdout sheet authorizing placement of tags and mechanical jumpers. TCN-29

2.7   Uncap and connect a hose between the following:

        a.   P1 Common Disch Header Vent, 2CCP-V140.

        b.   P1 Common Suct Header Vent, 2CCP-V221.

2.8   Open the following:

        a.   P1 Common Disch. Header Vent, 2CCP-V140.

        b.   P1 Common Suct. Header Vent, 2CCP-V221.

NOTE: Perform steps 2.9 through 2.28 in any order.

NOTE: When venting from a valve, open until a steady stream of water appears, then shut valve. Direct drains to Radwaste or a suitable container. Ensure the container is properly labeled. Contact Radiation Protection for assistance if properly labeled containers are unavailable.

2.9   Vent from the following and replace cap (perform these steps in any order):

        a.   Instrument Header Vent, 2CCP-V185

        b.   LS120 Instrument Vent, 2CCP-V371

        c.   LS102 Inst. Vent, 2CCP-V370

        d.   LS110 Inst. Vent, 2CCP-V373
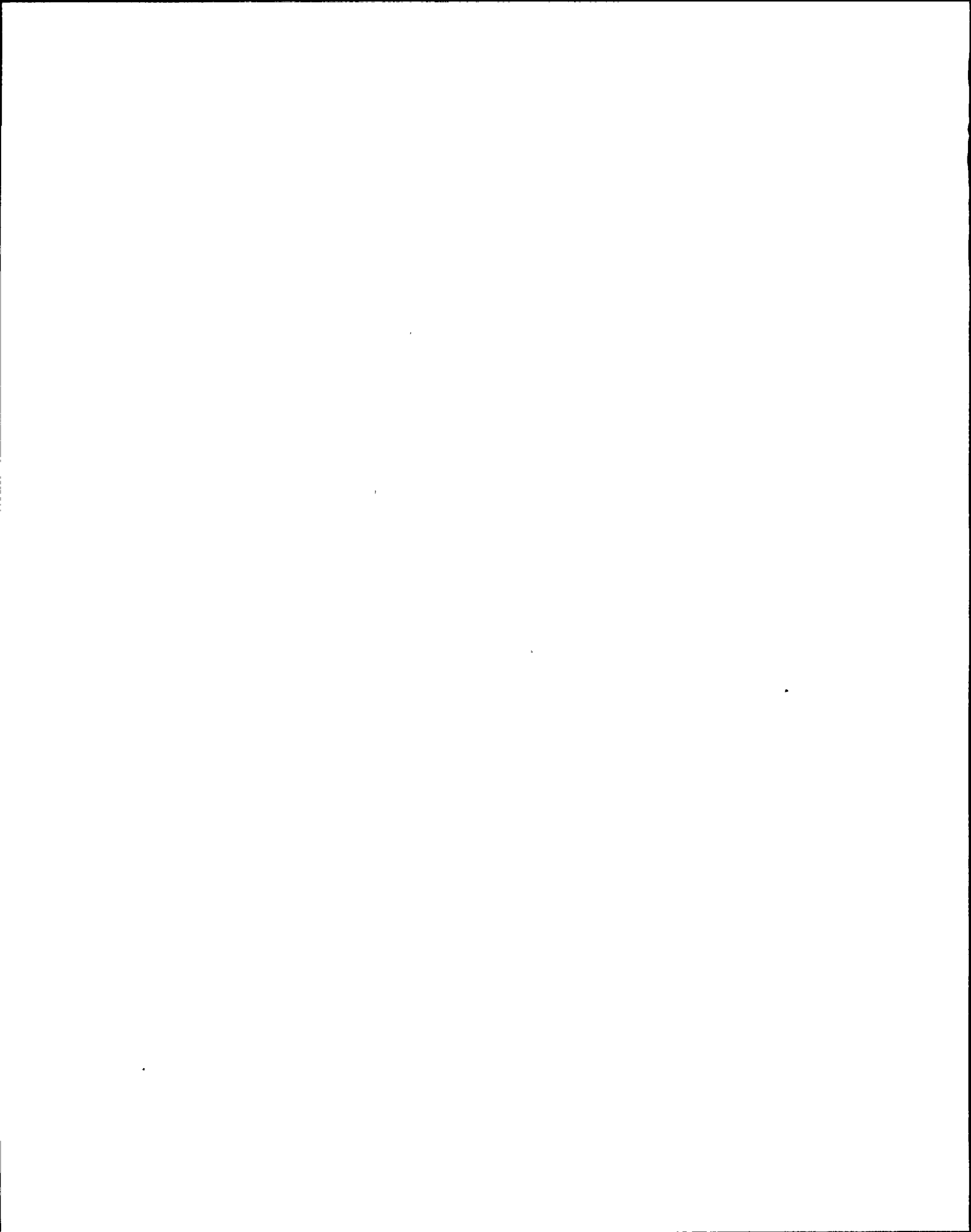
2.9   (Cont)

     e.   CCP From PASS Vent, 2CCP-V970

     f.   P1A Vent, 2CCP-V195

     g.   Strainer 1B Test Conn, 2CCP-V666

     h.   Strainer 1B Test Conn, 2CCP-V667

     i.   P1B Vent, 2CCP-V196

     j.   Strainer 1C Test Conn, 2CCP-V665

     k.   Strainer 1C Test Conn, 2CCP-V673

     ℓ.   P1C Vent, 2CCP-V197

     m.   CCP Header Vent, 2CCP-V158

     n.   Vent Conn Upstream Of MOV17B, 2CCP-V269

     o.   Vent Conn Upstream Of MOV93B, 2CCP-V534

     p.   CCP To PASS Vent, 2CCP-V971

     q.   Rx Recirc Sample Cooler Outlet Vent, 2CCP-V938

     r.   Vent Conn Downstream Of MOV124, 2CCP-V73

     s.   Vent Conn Upstream Of MOV265, 2CCP-V514

     t.   Vent Conn Upstream Of SSR-IPNL145, 2CCP-V929

     u.   Vent Conn Downstream Of SSR-IPNL145, 2CCP-V917

     v.   Vent Conn Upstream Of SSR-IPNL145, 2CCP-V676

     w.   Vent Conn On CCP Hx Inlet Hdr, 2CCP-V74

     x.   Vent Conn Downstream Of TV108, 2CCP-V477

     y.   RDS Bearing Seal Cooler Inlet Hdr Vent, 2CCP-V498

     z.   RDS Bearing & Seal Cooler Disch Hdr Vent, 2CCP-V916

     aa.   WCS P1A Brg & Seal Cooler Inlet Hdr Vent, 2CCP-V584

     ab.   CCP HX 1A Shellside Vent, 2CCP-V263

     ac.   CCP HX 1B Shellside Vent, 2CCP-V262

     ad.   CCP HX 1C Shellside Vent, 2CCP-V261

     ae.   CCP P3A Vent, 2CCP-V795
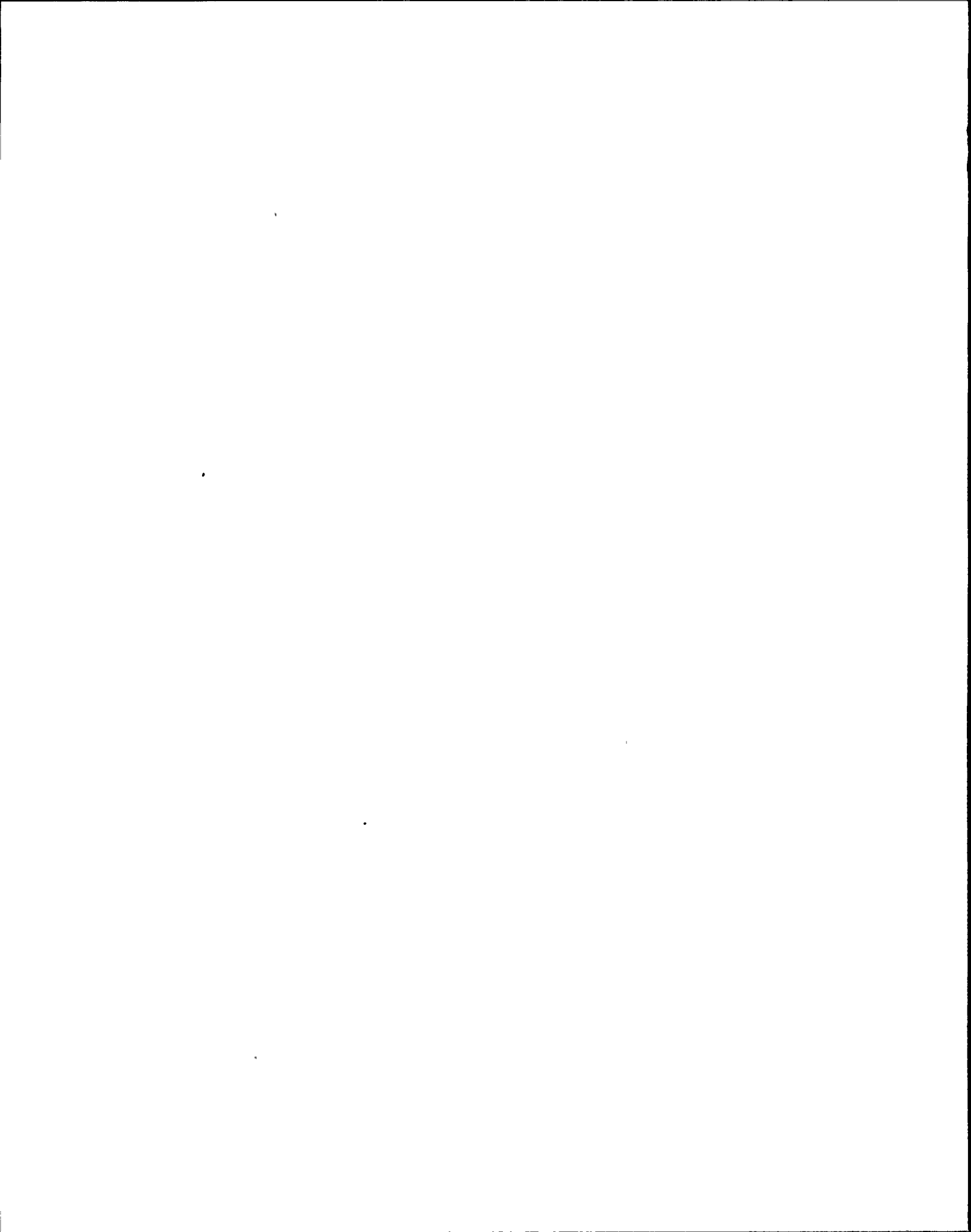
2.9   (Cont)

    af.   CCP P3B Vent, 2CCP-V800

    ag.   CCP P3C Vent, 2CCP-V805

    ah.   Seal Cooler For RHS P1A Outlet Vent, 2CCP*V87

    ai.   Seal Cooler For RHS P1A Inlet Vent, 2CCP*V85

    aj.   Sample Cooler 3A Inlet Vent, 2CCP-V901

    ak.   Sample Cooler 3A Outlet Vent, 2CCP-V903

    aℓ.   DER Cooler 2B Outlet Vent, 2CCP-V591

    am.   RHS Sample Cooler 1B Disch Line Vent, 2CCP-V936

    an.   RHS P1B Seal Cooler Inlet Line Vent, 2CCP*V935

    ao.   RHS P1B Seal Cooler Inlet Line Vent, 2CCP*V920

    ap.   RHS P1B Seal Cooler Outlet Line Vent, 2CCP*V937

    aq.   RHS P1C Seal Cooler Inlet Line Vent, 2CCP*V918

    ar.   RHS P1C Seal Cooler Outlet Line Vent, 2CCP*V919

    as.   DER Cooler E1 Outlet Line Vent, 2CCP-V589

    at.   CCP Return Header Vent, 2CCP-V329

    au.   CCP Supply Header Vent, 2CCP-V476

    av.   DER Cooler 2A Outlet Vent, 2CCP-V593

    aw   TANK 2 Level Stand Vent, 2CCP-V878

    ax.   LSY180 Inst. Vent, 2CCP-V924

    ay.   LSX180 Inst. Vent, 2CCP-V899

    az.   LS181 Inst. Vent, 2CCP-V877

    ba.   Strainer 1A Test Conn, 2CCP-V668

    bb.   Strainer 1A Test Conn, 2CCP-V608

    bc.   Rx Recirc. Sample Cooler Test Conn, 2CCP-V691

    bd.   Vent Conn. Downstream Of MOV22B, 2CCP-V212

    be.   Vent Downstream Of WCS Non-Regen HX, 2CCP-V248

    bf.   WCS Bearing & Seal Cooler Outlet Hdr Vent, 2CCP-V220
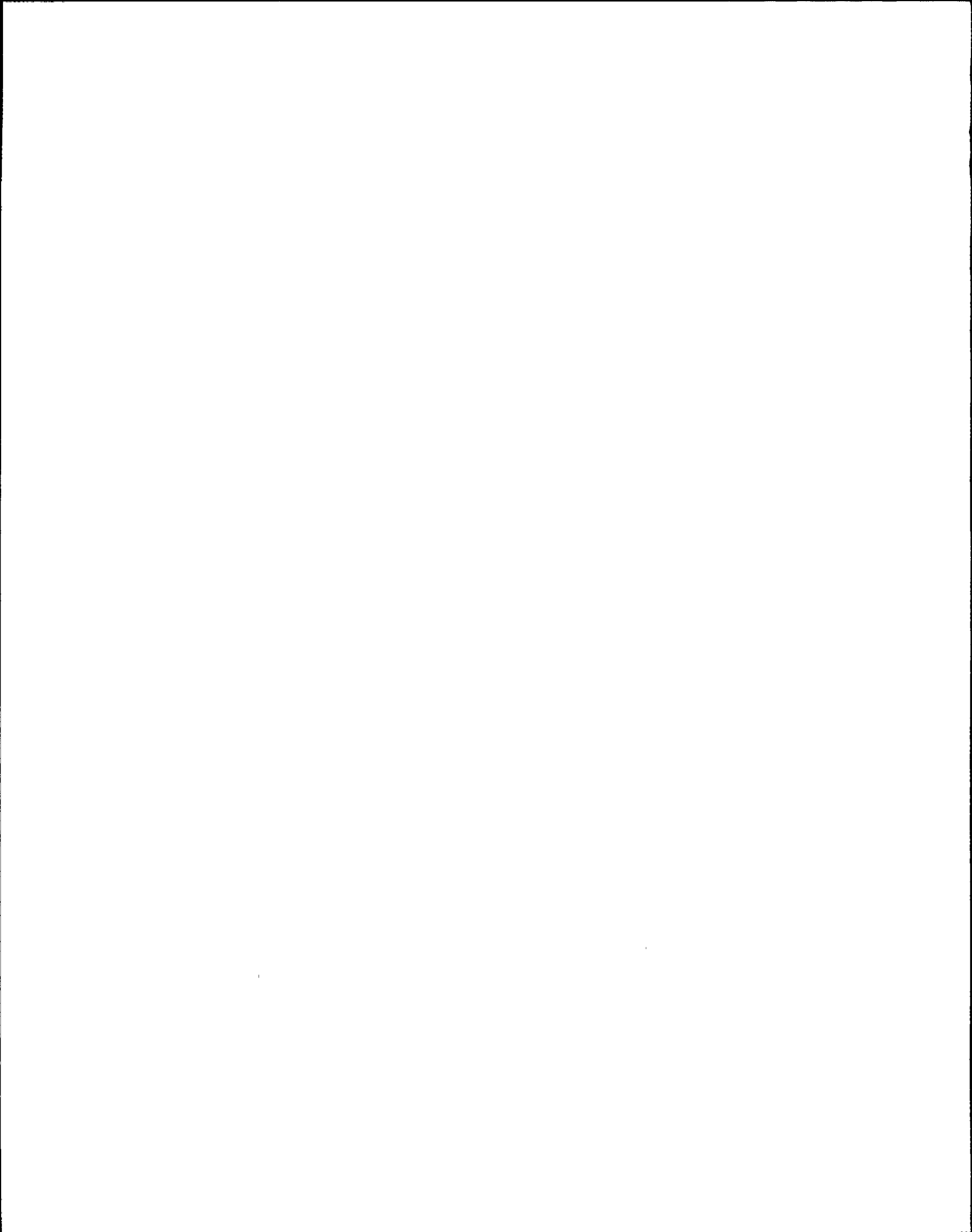
2.9   (Cont)

        bg.   Sample Cooler 3A Inlet Test Conn, 2CCP-V687

        bh.   Upstream Vent For AOV38B, 2CCP-V318

        bi.   Upstream Vent For AOV38B, 2CCP-V930

        bj.   Downstream Vent For AOV38B, 2CCP-V902

        bk.   Sample Cooler 3B Test Conn, 2CCP-V683

        bℓ   Strainer 1E Test Conn, 2CCP-V797

        bm.   Strainer 1E Test Conn, 2CCP-V798

        bn.   Strainer 1F Test Conn, 2CCP-V802

        bo.   Strainer 1F Test Conn, 2CCP-V803

        bp.   Strainer 1D Test Conn, 2CCP-V792

        bq.   Strainer 1D Test Conn, 2CCP-V793

2.10   Vent, per the following:

        a.   Open RCS-E2A Outlet Line Vent, 2CCP-V776.

        b.   Uncap and vent from RCS-E2A Outlet Line Vent, 2CCP-V775. Replace cap.

        c.   Shut RCS-E2A Outlet Line Vent, 2CCP-V776.

2.11   Vent, per the following:

        a.   Open RCS-E5A Outlet Line Vent, 2CCP-V774.

        b.   Uncap and vent from RCS-E5A Outlet Line Vent, 2CCP-V773. Replace cap.

        c.   Shut RCS-E5A Outlet Line Vent, 2CCP-V774.

2.12   Vent, per the following:

        a.   Open RCS-E5C Outlet Line Vent, 2CCP-V772.

        b.   Uncap and vent from RCS-E5C Outlet Line Vent, 2CCP-V771. Replace cap.

        c.   Shut RCS-E5C Outlet Line Vent, 2CCP-V772.

2.13   Vent, per the following:

        a.   Open RCS-E5A, E5C Outlet Header Vent, 2CCP-V781.

        b.   Uncap and vent from RCS-E5A, E5C Outlet Header Vent, 2CCP-V782. Replace cap.

        c.   Shut RCS-E5A, E5C Outlet Header Vent, 2CCP-V781.
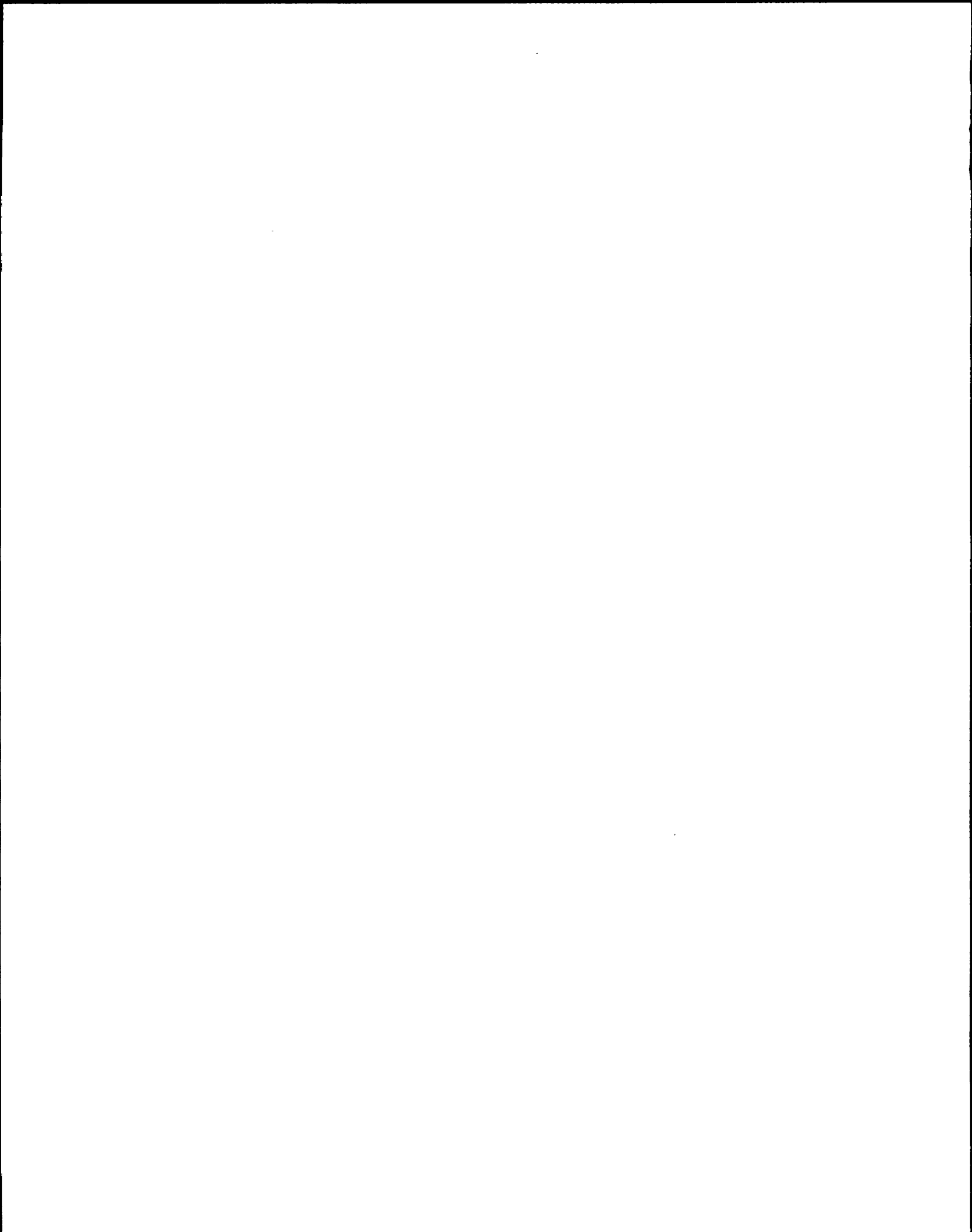
2.14   Vent, per the following:

    a.   Open RCS-E2B Inlet Line Vent, 2CCP-V944.

    b.   Uncap and vent from RCS-E2B Inlet Line Vent, 2CCP-V945. Replace cap.

    c.   Shut RCS-E2B Inlet Line Vent, 2CCP-V944.

2.15   Vent, per the following:

    a.   Open RCS-E2B Inlet Line Vent, 2CCP-V944.

    b.   Uncap and vent from RCS-E2B Inlet Line Vent, 2CCP-V945. Replace cap.

    c.   Shut RCS-E2B Inlet Line Vent, 2CCP-V944.

2.16   Vent, per the following:

    a.   Open RCS-E3B Outlet Line Vent, 2CCP-V719.

    b.   Uncap and vent from RCS-E3B Outlet Line Vent, 2CCP-V710. Replace cap.

    c.   Shut RCS-E3B Outlet Line Vent, 2CCP-V719.

2.17   Vent, per the following:

    a.   Open RCS-E4B Outlet Line Vent, 2CCP-V720.

    b.   Uncap and vent from RCS-E4B Outlet Line Vent, 2CCP-V709. Replace cap.

    c.   Shut RCS-E4B Outlet Line Vent, 2CCP-V720.

2.18   Vent, per the following:

    a.   Open RCS-E4A Outlet Line Vent, 2CCP-V780.

    b.   Uncap and vent from RCS-E4A Outlet Line Vent, 2CCP-V779. Replace cap.

    c.   Shut RCS-E4A Outlet Line Vent, 2CCP-V780.

2.19   Vent, per the following:

    a.   Open RCS-E3A Outlet Line Vent, 2CCP-V778.

    b.   Uncap and vent from RCS-E3A Outlet Line Vent, 2CCP-V777. Replace cap.

    c.   Shut RCS-E3A Outlet Line Vent, 2CCP-V778.
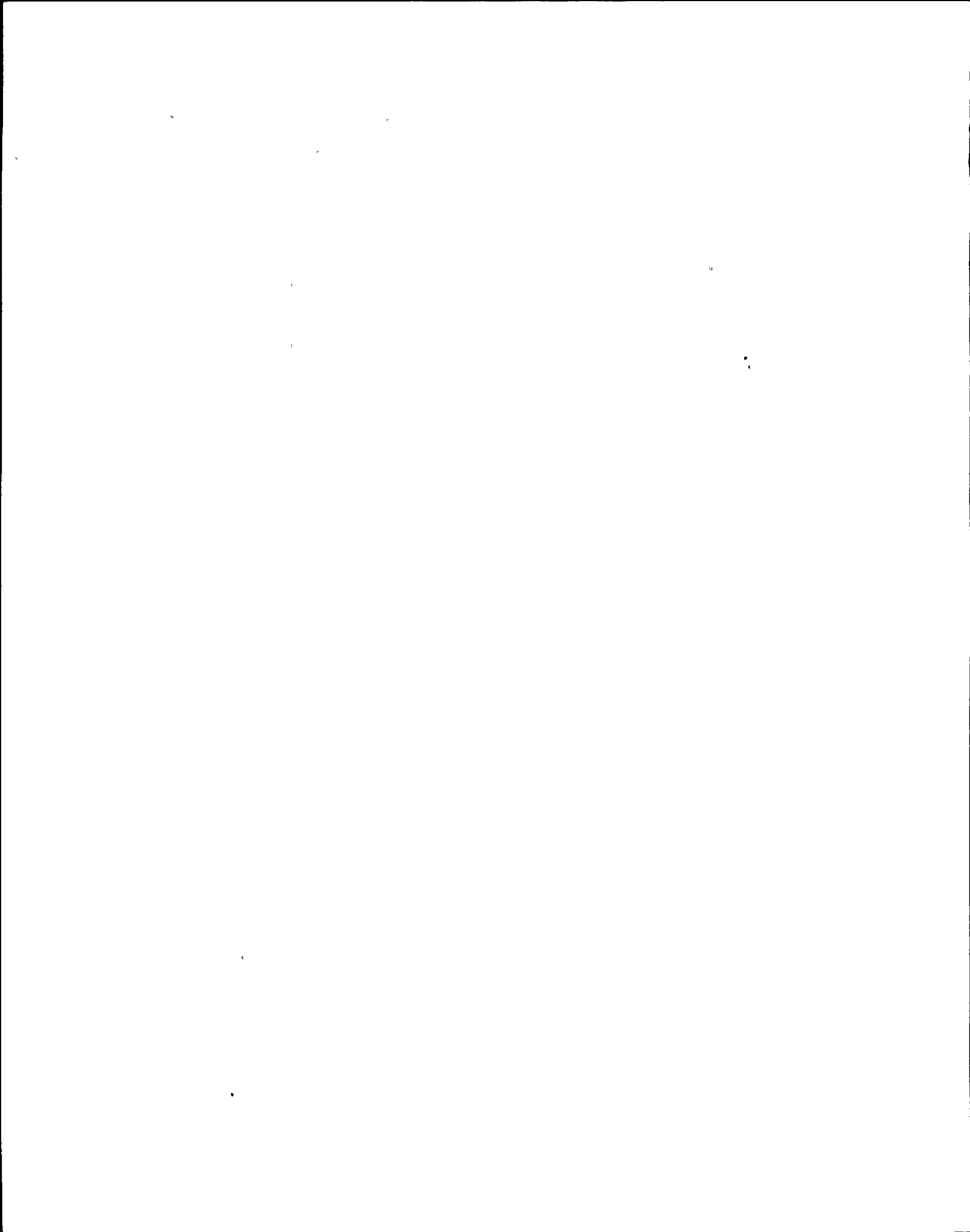
2.20   Vent, per the following:

a.   Open RCS Pump Mtr Winding Inlet Header Vent, 2CCP*V715.

b.   Uncap and vent from RCS Pump Mtr Winding Inlet Header Vent, 2CCP*V713. Replace cap.

c.   Shut RCS Pump Mtr Winding Inlet Header Vent, 2CCP*V715.

2.21   Vent, per the following:

a.   Open Vent Upstream Of MOV16B, 2CCP-V481.

b.   Uncap and vent from Vent Upstream Of MOV16B, 2CCP-V539. Replace cap.

c.   Shut Vent Upstream Of MOV16B, 2CCP-V481.

2.22   Vent, per the following:

a.   Open Vent Upstream Of MOV16B, 2CCP-V537.

b.   Uncap and Vent from Vent Upstream Of MOV16B, 2CCP-V540. Replace cap.

c.   Shut Vent Upstream of MOV16B, 2CCP-V537.

2.23   Vent, per the following:

a.   Open DRS Unit Coolers Outlet Header Vent, 2CCP-V907.

b.   Uncap and vent from DRS Unit Coolers Outlet Header Vent, 2CCP-V910. Replace cap.

c.   Shut DRS Unit Coolers Outlet Header Vent, 2CCP-V907.

2.24   Vent, per the following:

a.   Open RCS-E2B Outlet Line Vent, 2CCP-V718.

b.   Uncap and vent from RCS-E2B Outlet Line Vent, 2CCP-V711. Replace cap.

c.   Shut RCS-E2B Outlet Line Vent, 2CCP-V718.

2.25   Vent, per the following:

a.   Open RCS-E5B Outlet Line Vent, 2CCP-V717.

b.   Uncap and vent from RCS-E5B Outlet Line Vent, 2CCP-V712. Replace cap.

c.   Shut RCS-E5B Outlet Line Vent, 2CCP-V717.
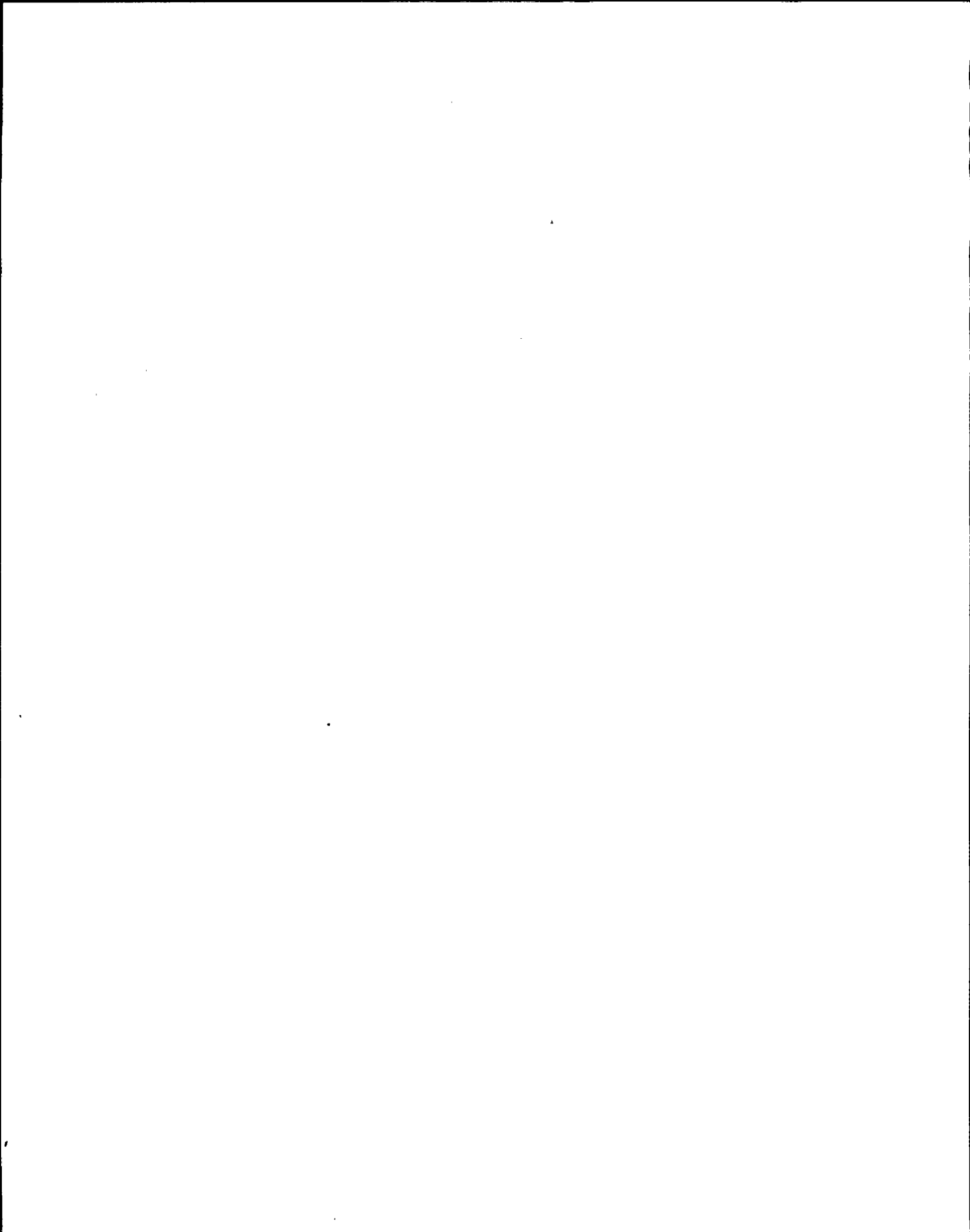
2.26   Vent, per the following:

    a.   Open RCS–E5D Outlet Line Vent, 2CCP-V716.

    b.   Uncap and vent from RCS–E5B Outlet Line Vent, 2CCP-V714. Replace cap.

    c.   Shut RCS–E5D Outlet Line Vent, 2CCP-V716.

2.27   Vent, per the following:

    a.   Open RCS–E5B, E5D Outlet Header Vent, 2CCP-V722.

    b.   Uncap and vent from RCS–E5B, E5D Outlet Header Vent, 2CCP-V721. Replace cap.

    c.   Shut RCS–E5B, E5D Outlet Line Vent; 2CCP-V722.

2.28   Vent from the following:

    a.   WCS P1B Bearing & Seal Cooler Vent, 2CCP-V963.

    b.   WCS P1A Bearing & Seal Cooler Vent, 2CCP-V962.

2.28.1   Clear yellow holdout. Independent Verification of tag and jumper removal is required. SSS shall sign holdout sheet authorizing tag removal.   TCN-29

2.29   Shut the following:

    a.   P1 Common Disch Header Vent, 2CCP-V140.

    b.   P1 Common Suct Header Vent, 2CCP-V221.

2.30   Remove hose from between the following and replace cap.

    a.   P1 Common Disch Header Vent, 2CCP-V140.

    b.   P1 Common Suct Header Vent, 2CCP-V221.

3.0   Instrument Air compressor Cooling Loop Startup

3.1   Verify RBCLC in service or perform Startup per E.1.0 of this procedure.

3.2   RBCLC Cooling Pumps P2A and P2B control switches in "PULL-TO-LOCK" at P851.

3.3   Verify Power Supply Lineup per Table II, for the following:

    a.   RBCLC Cooling Pump P2A, 2CCP-P2A.

    b.   RBCLC Cooling Pump P2B, 2CCP-P2B.

    c.   RBCLC Expansion Tank TK2 Level Control, 2CCP-AOV180.
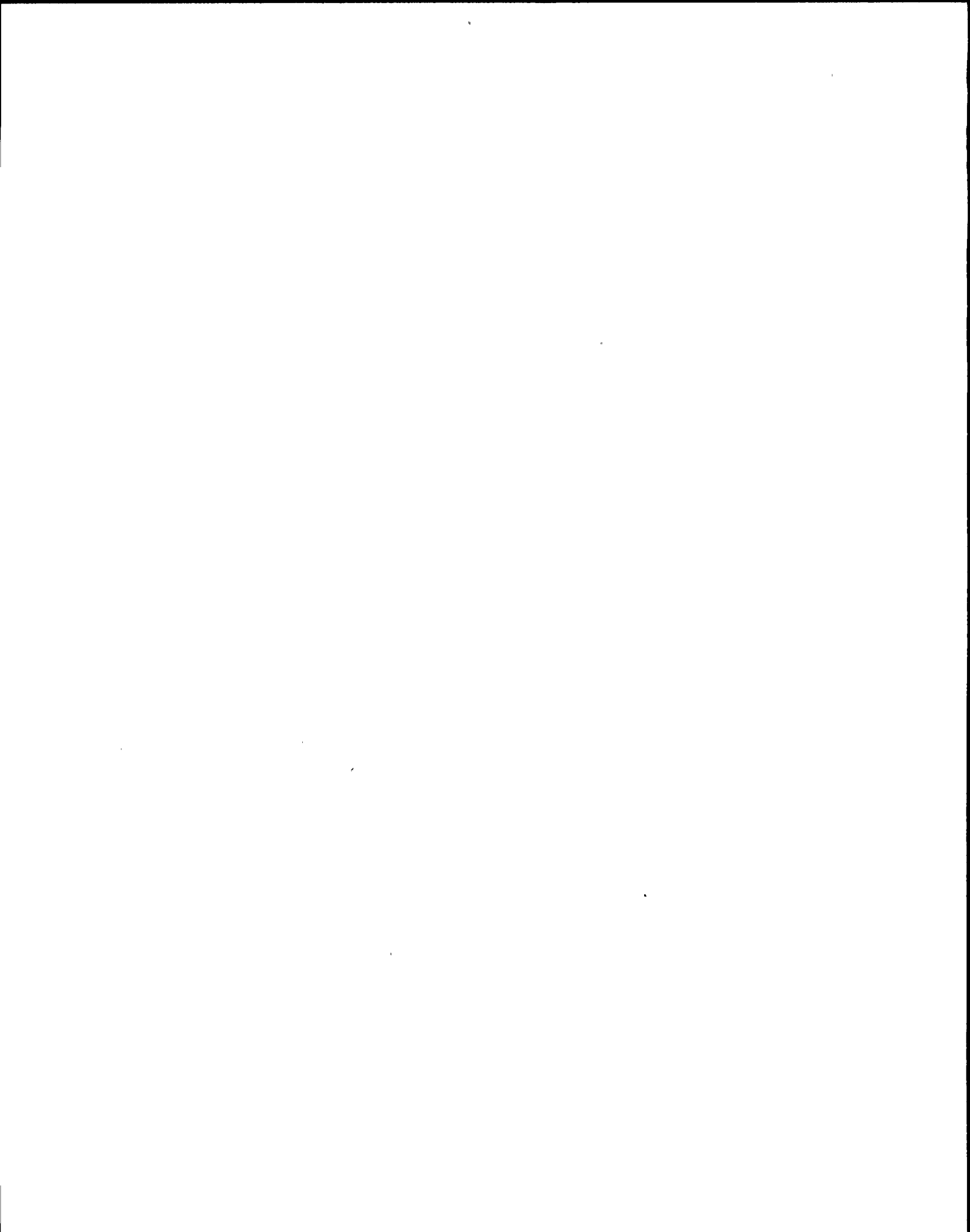
3.4   Verify RBCLC Expansion Tank TK2 level being maintained 6-24 inches, as indicated locally on 2CCP-LI127.

3.5   Vent from the following by removing cap and opening valve until a steady stream of water appears. Shut valve and replace cap. (Perform these steps in any order.):

   a.   PI25A, PS25A Inst Line Vent, 2CCP-V880

   b.   PI25B, PS25B Inst Line Vent, 2CCP-V884

   c.   P2A Vent, 2CCP-V881

   d.   P2B Vent, 2CCP-V885

   e.   P2A Disch Line Test Conn, 2CCP-V882

   f.   P2B Disch Line Test Conn, 2CCP-V886

   g.   HX2A Tubeside Vent, 2CCP-V892

   h.   HX2B Tubeside Vent, 2CCP-V890

   i.   IAS A Coolers Outlet Vent, 2CCP-V974

   j.   IAS A Coolers Outlet Vent, 2CCP-V977

   k.   IAS B Coolers Outlet Vent, 2CCP-V975

   1.   IAS B Coolers Outlet Vent, 2CCP-V978

   m.   IAS C Coolers Outlet Vent, 2CCP-V976

   n.   IAS C Coolers Outlet Vent, 2CCP-V979

NOTE: One Instrument Air compressor Cooling Heat Exchanger is normally in service.

3.6   Perform the following per section F of this procedure.

   a.   Place Instrument Air Compressor Cooling Heat Exchanger 2A(B) in service.

   b.   Remove Instrument Air Compressor Cooling Heat Exchanger 2B(A) from service.

NOTE: RBCLC Cooling Pump will auto start on low system flow when control switch is taken out of "PULL-TO-LOCK."

3.7   Start RBCLC Cooling Pump P2A(B), at P851.

3.8   Verify RBCLC System Operating Status Checks, per this procedure.

3.9   Place the non-running RBCLC Cooling Pump P2B(A) control switch in normal after "STOP," at P851.
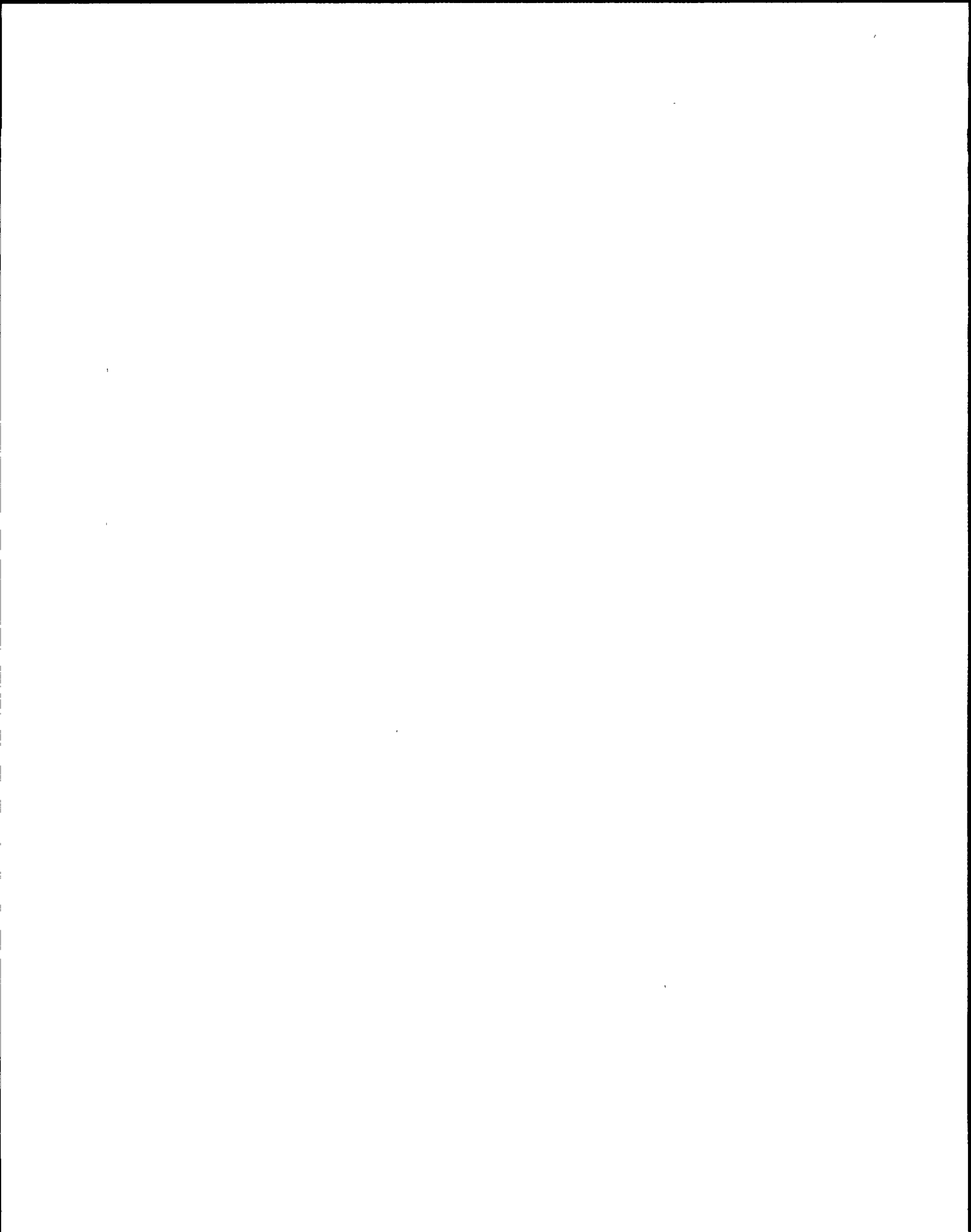
F. NORMAL OPERATION

1.0   System Operating Status Checks

1.1   Verify the following at P601:

    a.   RBCLC P1A(B)(C) Current less than 20 amps.

    b.   RBCLC P3A(B)(C) Current less than 20 amps.

    c.   RBCLC Pumps Disch Header Press greater than 28 psig.

    d.   RBCLC Booster Pumps Disch Header Press greater than 60 psig.

1.2   Verify the following locally for the running RBCLC Pump, 2CCP-P1A(B)(C):

    a.   Pump discharge pressure greater than 42 psig as indicated locally on 2CCP-PI58A(B)(C).

    b.   No evidence of pump cavitation (unusual noise, suction/discharge pressure fluctuations). Vent from P1A(B)(C) Vent, 2CCP-V195 (V196) (V197), as required.

    c.   Pump suction pressure greater than 0 psig as indicated locally on 2CCP-PI57A(B)(C).

1.3   Verify the following locally for the running RBCLC Booster Pump P3A(B)(C):

    a.   Pump discharge pressure greater than 60 psig as indicated on 2CCP-PI46A(B)(C).

    b.   No evidence of pump cavitation (unusual noise, suction/discharge fluctuations). Vent from P3A(B)(C) Vent, 2CCP-V795 (V800) (V805), as required.

    c.   Pump suction pressure greater than 5 psig as indicated on 2CCP-PI45A(B)(C).

1.4   Verify the idle RBCLC pump casing is free of air:

    a.   Open 2CCP-P1A(B)(C) casing vent valve 2CCP-V195 (V196) (V197).

    b.   When a steady stream of water is observed, shut 2CCP-V195 (V196)(V197).

1.5   Verify locally RBCLC Expansion Tank TK1 level being maintained 58-70 inches, as indicated locally on 2CCP-LI121.

1.6   Verify RBCLC Temp Control, 2CCP-TIK108, maintaining approximately 86°F.

1.7   During outages, verify RBCLC temperature control, 2CCP-TIK108 maintaining temperature in the drywell as low as practicable for personnel comfort and safety.

16455
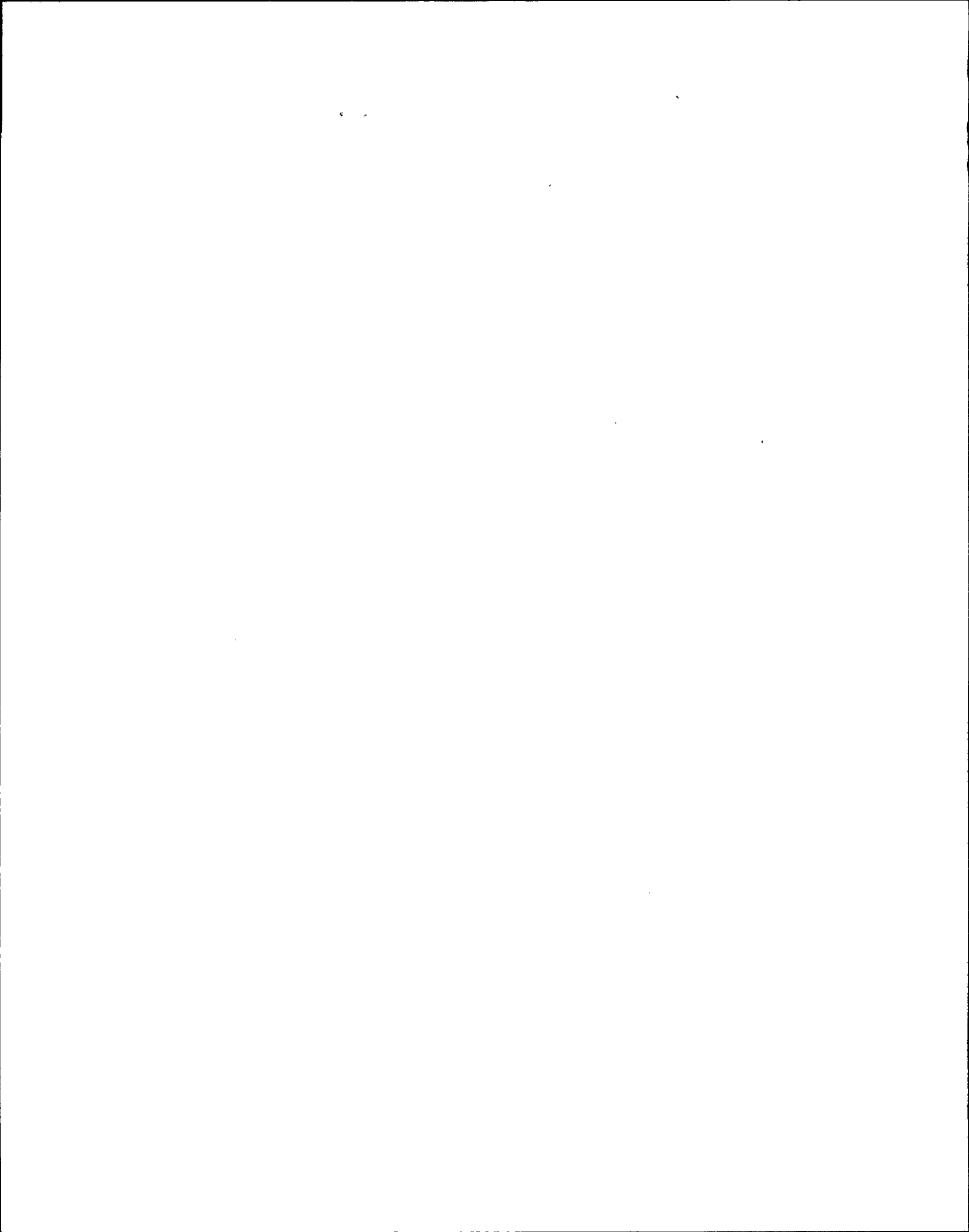
2.0   Instrument Air Compressor Cooling Loop Operating Status Checks

2.1   Verify the following locally for the running RBCLC Instrument
       Air Compressor Cooling Pump P2A(B):

       a.   Pump discharge header pressure greater than 45 psig as
             indicated on 2CCP-PI136.

       b.   Pump suction pressure greater than 4 psig as indicated on
             2CCP-PI25A(B).

       c.   No evidence of pump cavitation (unusual noise,
             suction/discharge fluctuations). Vent from P2A(B) Vent,
             2CCP-V885 (V881), as required.

2.2   Verify locally RBCLC Expansion Tank TK2 level being maintained | TCN-18
       6-24 inches, as indicated locally on 2CCP-LI127.

3.0   Shifting/Starting/Stopping RBCLC Pumps (P1)

3.1   Shift RBCLC Pumps P1A(B)(C), as required, per the following:

       a.   Start idle RBCLC Pump P1, at P601.

       b.   Stop running RBCLC Pump P1, at P601.

       c.   Verify RBCLC System Operating Status Checks, per this
             procedure.

3.2   Start RBCLC Pump P1A(B)(C), as required, per the following:

       a.   If starting from no pumps running, refer to section E of
             this procedure.

       b.   Start idle RBCLC Pump P1A(B)(C), at P601.

       c.   Verify RBCLC System Operating Status Checks, per this
             procedure.

3.3   Stop RBCLC Pump P1A(B)(C), as required, per the following:

       a.   Stop running RBCLC Pump P1A(B)(C), at P601.

       b.   Verify RBCLC System Operating Status Checks, per this
             procedure.

4.0   Shifting/Starting/Stopping RBCLC Booster Pumps (P3)

4.1   Shift RBCLC Booster Pumps P3A(B)(C), as required, per the
       following:

       a.   Start idle RBCLC Booster Pump P3, at P601.
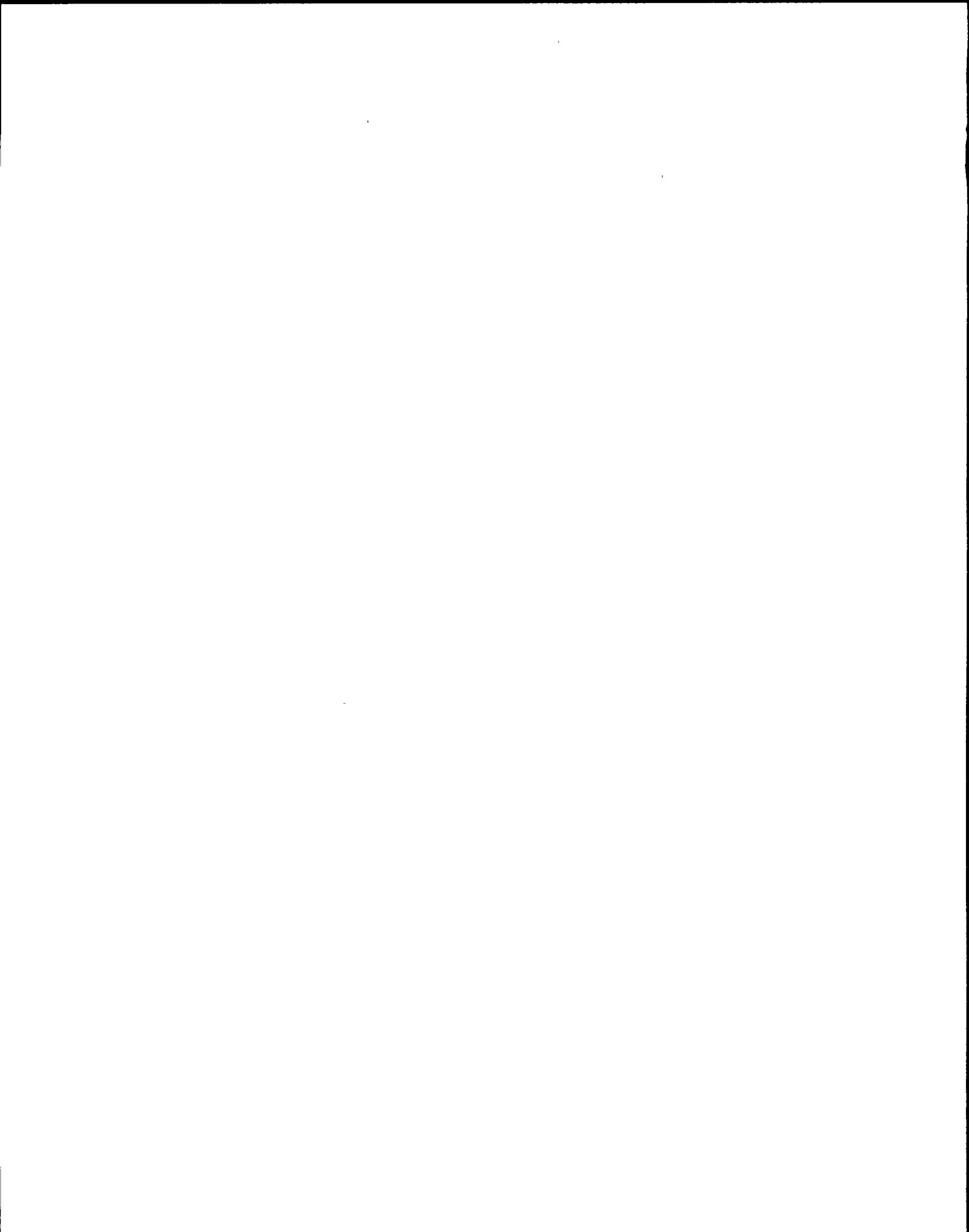
b. Stop running RBCLC Pump P3, at P601.

c. Verify RBCLC System Operating Status Checks, per this procedure.

4.2 Start RBCLC Booster Pump P3A(B)(C), as required, per the following:

a. If starting from no pumps running, refer to section E of this procedure.

b. Start idle RBCLC Booster Pump P3, at P601.

c. Verify RBCLC System Operating Status Checks, per this procedure.

4.3 Stop RBCLC Booster Pump P3A(B)(C), as required, per the following:

a. Stop running RBCLC Booster Pump P3A(B)(C), at P601.

b. Verify RBCLC System Operating Status Checks, per this procedure.

5.0 <u>Shifting Instrument Air Compressor Cooling Pumps (P2)</u>

5.1 Starting RBCLC Cooling Pump P2A(B), at P851.

5.2 Stop RBCLC Cooling Pump P2B(A), at P851.

5.3 Verify RBCLC Instrument Air Compressor Cooling Loop Operating Status Checks, per this procedure.

6.0 <u>Shifting/Removing From Service/Placing In Service RBCLC Heat Exchangers</u>

6.1 To shift RBCLC Heat Exchangers, perform the following:

a. Place RBCLC Heat Exchanger 1A, B or C in service per 6.2.

b. Remove RBCLC Heat Exchanger 1A, B or C from service per 6.3.

6.2 To place RBCLC Heat Exchanger 1A(B)(C) in service, perform the following:

a. Open CCP Heat Exchanger 1A(B)(C) Inlet, 2SWP-V45A(B)(C).

b. Uncap and vent from CCP Heat Exchanger 1A(B)(C) Vent, 2SWP-V61A(B)(C), until a steady stream of water appears. Replace cap.

c. Open CCP Heat Exchanger 1A(B)(C) Outlet, 2SWP-V55A(B)(C), not to exceed 8 PSID across the SWP side of the heat · | *
exchanger.

d. Uncap and vent from CCP Heat Exchanger 1A(B)(C) Shellside Vent, 2CCP-V263 (V262) (261), until a steady stream of water appears. Replace cap.
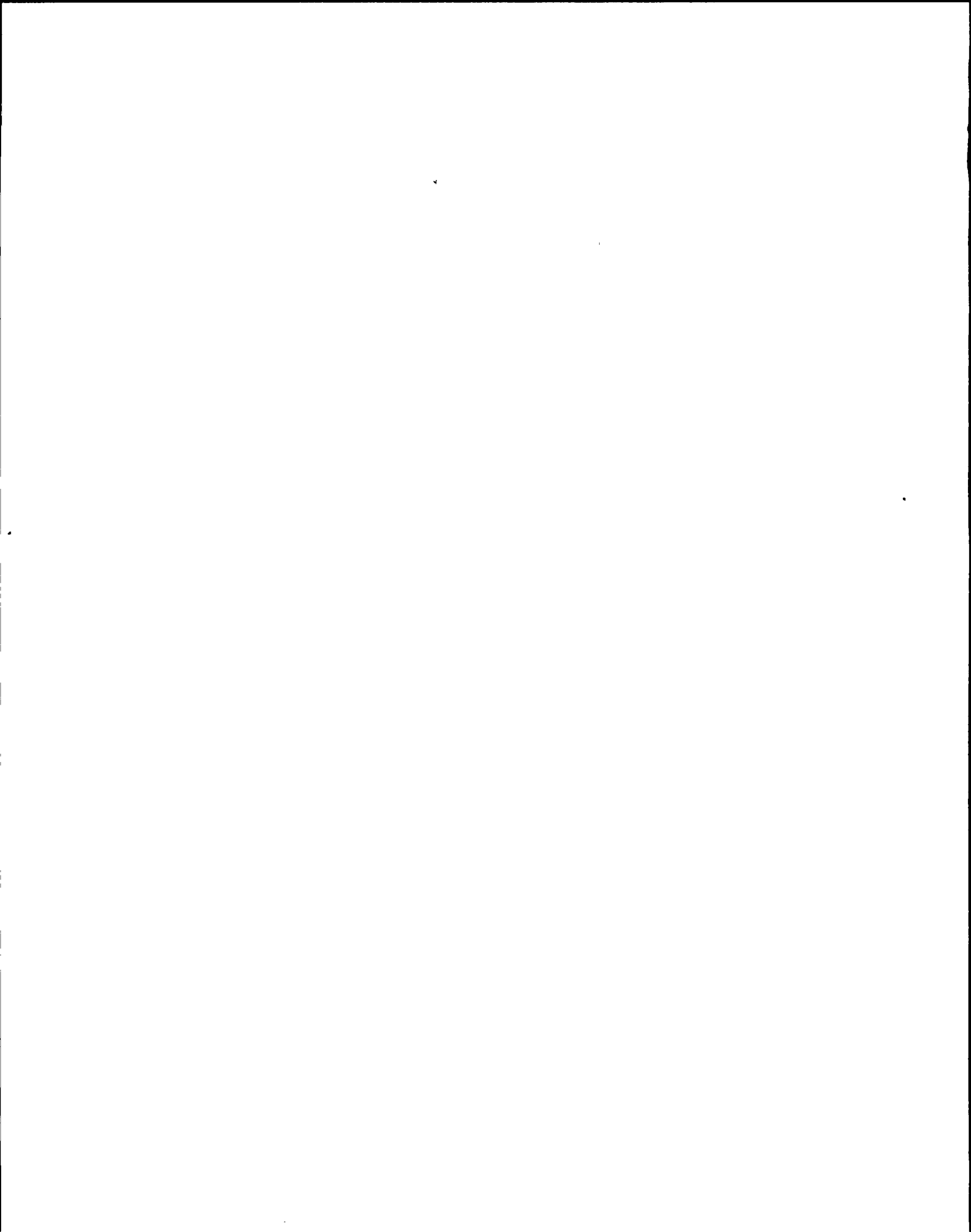
e.   Open CCP Heat Exchanger 1A(B)(C) Outlet Isol, 2CCP-V169 (V170) (V171).

6.3 To remove RBCLC Heat Exchanger 1A(B)(C) from service, perform the following:

a.   Shut CCP Heat Exchanger 1A(B)(C) Outlet Isol, 2CCP-V169 (V170) (V171).

b.   Shut CCP Heat Exchanger 1A(B)(C) Outlet, 2SWP-V55A(B)(C).

6.4 Verify System Operating Status Checks, per this procedure.

7.0 Shifting/Removing From Service/Placing In Service Instrument Air Compressor Cooling Heat Exchangers

7.1 To shift Instrument Air Compressor Heat Exchangers, perform the following:

a.   Place Instrument Air Compressor Heat Exchanger 2A(B) in service per 7.2.

b.   Remove Instrument Air Compressor Heat Exchanger 2B(A) in service per 7.3.

7.2 To place Instrument Air Compressor Heat Exchanger 2A(B) in service, perform the following:

NOTE: Fill and vent Heat Exchanger slowly to prevent an Expansion Tank low level condition.

a.   Open Heat Exchanger 2A(B) Cooling Water Inlet Isol, 2CCP-V857 (V858).

b.   Uncap and vent from Heat Exchanger 2A(B) Tubeside Vent, 2CCP-V892 (V890), until a steady stream of water appears. Replace cap.

c.   Open Heat Exchanger 2A(B) Cooling Water Outlet Isol, 2CCP-V859 (V860).

d.   Open Heat Exchanger 2A(B) Inlet Isol, 2CCP-V855 (V853).

e.   Open Heat Exchanger 2A(B) Outlet Isol, 2CCP-V856 (V854).

7.3 To remove Instrument Air Compressor Heat Exchanger 2A(B) from service, perform the following:

a.   Shut Heat Exchanger 2A(B) Outlet Isol, 2CCP-V856 (V854).
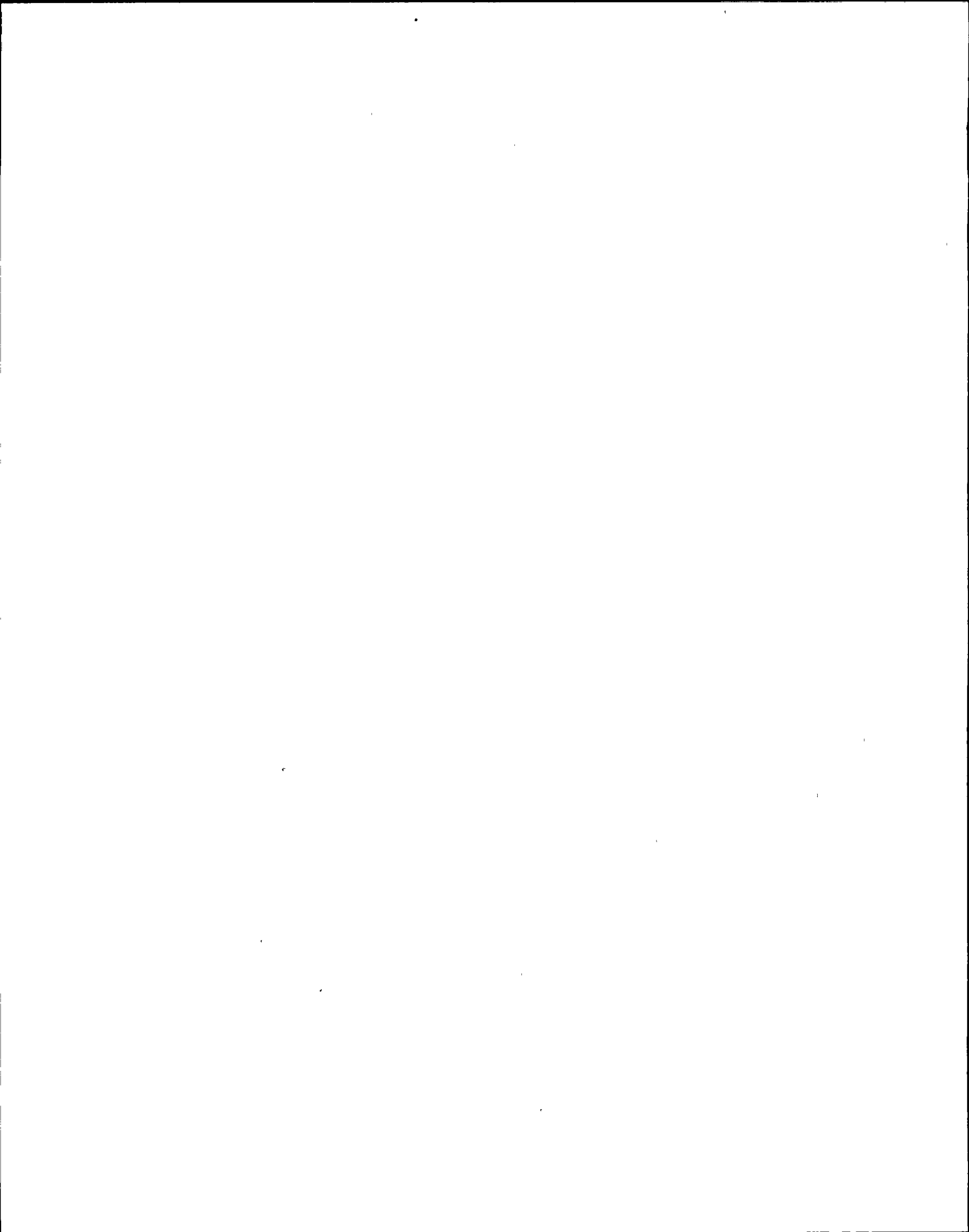
b. Shut Heat Exchanger 2A(B) Inlet Isol, 2CCP-V855 (V853).

c. Shut Heat Exchanger 2A(B) Cooling Water Outlet Isol, 2CCP-V859 (V860).

d. Shut Heat Exchanger 2A(B) Cooling Water Inlet Isol, 2CCP-V857 (V858).

7.4 Verify Instrument Air Compressor Cooling Loop Operating Status Checks, per this procedure.

G. SHUTDOWN PROCEDURE

1.0 RBCLC Shutdown To No Pumps Running

1.1 Verify RBCLC not required to any loads, per Attachment I. Remove components from service or provide alternate cooling, as required.

NOTE: RBCLC Pumps and RBCLC Booster Pumps will auto start on low discharge header pressure.

1.2 Place the non-running RBCLC Pumps P1A(B)(C) control switches in "PULL-TO-LOCK," at P601.

1.3 Place the non-running RBCLC Booster Pump P3A(B)(C) control switches in "PULL-TO-LOCK," at P601.

1.4 Place the running RBCLC Booster Pump P3A(B)(C) control switches in "PULL-TO-LOCK," at P601.

1.5 Place the running RBCLC Pump P1A(B)(C) control switches in "PULL-TO-LOCK," at P601.

2.0 Instrument Air Compressor Cooling Loop Shutdown

2.1 Shutdown Instrument Air Compressors per N2-OP-19.

2.2 Place RBCLC Cooling Pump P2A and P2B control switches in "PULL-TO-LOCK," at P851.

H. OFF NORMAL PROCEDURES

1.0 Loss of Reactor Building Closed LOOP Cooling

1.1 Attempt one restart to obtain at least one CCP Booster Pump and one CCP Main Pump running.

1.2 If a CCP Booster and Main Pump cannot be maintained running, then perform Reactor Scram per N2-OP-101C, section H.

1.3 Remove Reactor Building Closed Loop Cooling loads from service (reference Attachment I), if required.
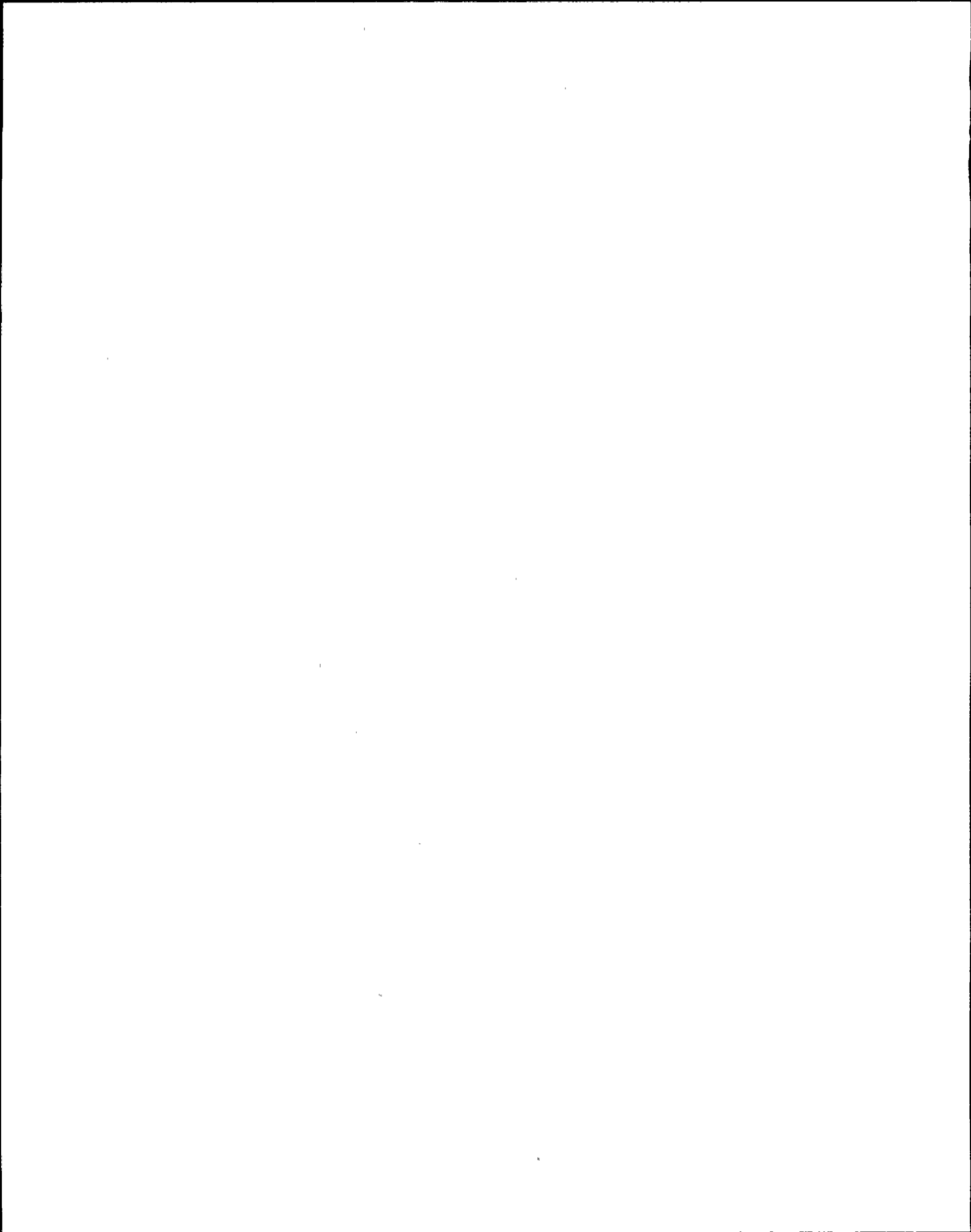
2.0   <u>Restoring RBCLC to DRS Unit Coolers with an Inadvertant</u>
        <u>Isolation Signal Present</u>

        <u>NOTE</u>:   Performance of the following requires entry into Tech. |TCN-31
                   Spec., Section 3.6.3, Primary Containment Isolation
                   Valves.

2.1   Place Division I (II) Drywell Unit Cooler Cooling Water LOCA |TCN-31
        Override Keylock switch to "OVERRIDE," at P873. Only the
        affected division shall have its override switch placed to
        override.

2.2   Open the following at P873 (as applicable):

        a.   RBCLC From DW Coolers Outbd IV, 2CCP*MOV124.

        b.   RBCLC From DW Coolers Inbd IV, 2CCP*MOV122.

        c.   RBCLC To DW Coolers Outbd IV, 2CCP*MOV265.

        d.   RBCLC To DW Coolers Inbd IV, 2CCP*MOV273.

2.3   Place DRS Unit Coolers in service per N2-OP-60 section H, as
        required.

2.4   When LOCA isolation signal is reset, place Division I (II) |TCN-31
        Drywell Unit Cooler Cooling Water LOCA Override Keylock switch
        to "RESET," at P873.

3.0   <u>Shifting Spent Fuel Pool Cooling Heat Exchanger 1A(B) Cooling</u>
        <u>Supply From RBCLC to Service Water</u>

3.1   Shut the following, at P873 (P875):

        a.   RBCLC From SFC HX, 2CCP*MOV18A(B).

        b.   RBCLC To SFC HX, 2CCP*MOV14A(B).

3.2   Open the following at P873 (P875):

        a.   Service Water To SFC HX, 2SWP*MOV17A(B).

        b.   Service Water From SFC HX, 2SWP*MOV18A(B).

3.3   Monitor Spent Fuel Pool Cooling per N2-OP-38.

4.0   <u>Shifting Spent Fuel Pool Cooling Heat Exchanger 1A(B) Cooling</u>
        <u>Supply From Service Water to RBCLC</u>

        <u>NOTE</u>:   It is recommended that prior to returning RBCLC System
                   as the source of cooling water to the Spent Fuel Pool
                   Cooling Heat Exchangers, isolate and flush the shell
                   side (RBCLC side) of the heat exchanger. This will
                   prevent low quality service water from being
                   introduced into the RBCLCW system.
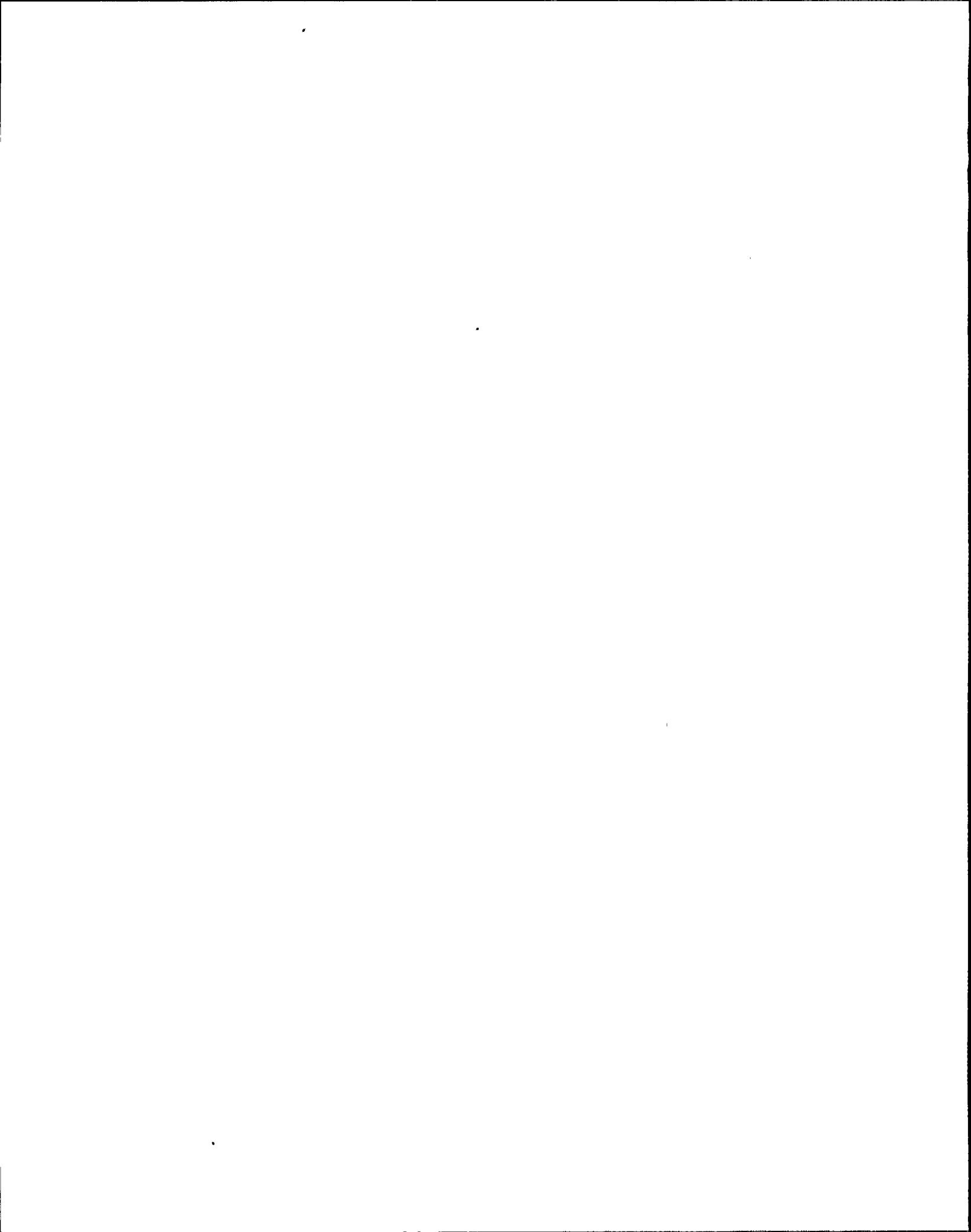
4.1   Shut the following at P873 (P875).

        a.   Service Water From SFC HX, 2SWP*MOV18A(B).

        b.   Service Water To SFC HX, 2SWP*MOV17A(B).

4.2   Open RBCLC To SFC HX, 2CCP*MOV14A(B), at P873 (875).

NOTE: Direct flushing water to floor drains or a suitable container.

4.3   Uncap and open SFC HX 1A(B) Outlet Test Conn, 2CCP*V236 (V208),
        to flush Heat Exchanger of Service Water.

4.4   When flush is complete, shut and cap SFC HX 1A(B) Outlet Test
        Conn, 2CCP*V236 (V208).

4.5   Open RBCLC From SFC HX, 2CCP*MOV18A(B).

4.6   Monitor Spent Fuel Pool Cooling per N2-OP-38.

5.0   Shifting RHR Pump 1A(1B/1C) Seal Cooler Cooling Supply From
        RBCLC to Service Water

5.1   Shut the following, at P601:

        a.   RBCLC From RHR P1A(P1B/P1C) Seal & Bearing Cooler,
              2CCP*AOV37A(B).

        b.   RBCLC To RHR P1A(P1B/P1C) Seal & Bearing Cooler,
              2CCP*AOV38A(B).

5.2   Open the following, at P601:

        a.   Service Water To RHR P1A(P1B/P1C) Seal & Bearing Cooler,
              2SWP*AOV20A(B).

        b.   Service Water From RHR P1A(P1B/P1C) Seal & Bearing Cooler,
              2SWP*AOV22A(B).

6.0   Shifting RHR Pump 1A(1B/1C) Seal Cooler Cooling Supply From
        Service Water to RBCLC

NOTE: It is recommended that prior to returning RBCLC System as the
        source of cooling water to the RHR Pump Seal Coolers, isolate
        and flush the RHS Pump Seal Coolers. This will prevent low
        quality service water from being introduced into the RBCLCW
        System.

6.1   Shut the following, at P601:

        a.   Service Water From RHR P1A(P1B/P1C) Seal & Bearing Cooler,
              2SWP*AOV22A(B).

        b.   Service Water To RHR P1A(P1B/P1C) Seal & Bearing Cooler,
              2SWP*AOV20A(B).
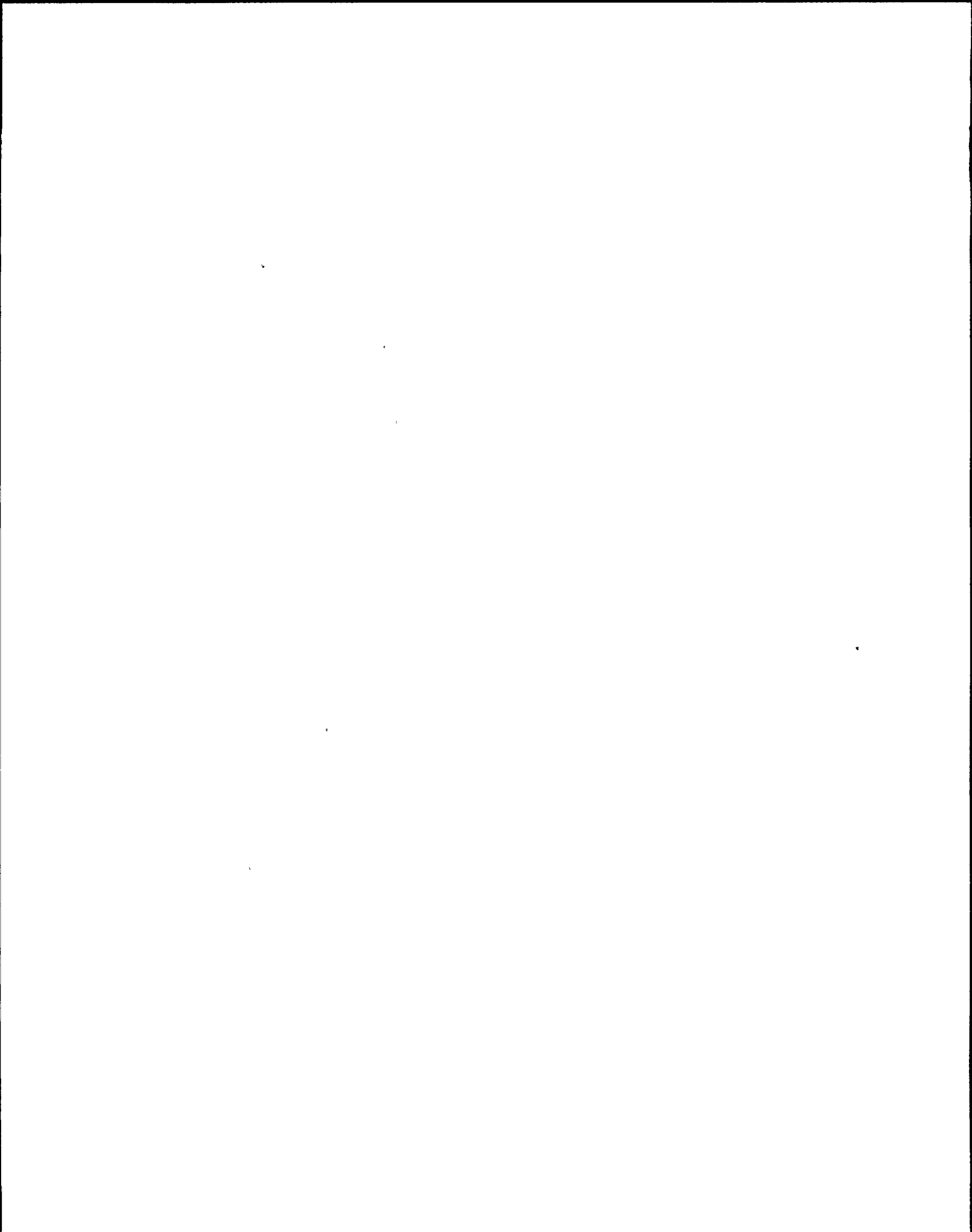
6.2   Open RBCLC to RHR P1A(P1B/P1C) Seal & Bearing Cooler, 2CCP*AOV38A(B), at P601.

NOTE: Direct flushing water to floor drains or a suitable container.

6.3   Uncap and open RHR Pump 1A(1B/1C) Seal Cooler Outlet Vent, 2CCP*V87 (V937/V919), to flush Seal Cooler of Service Water.

6.4   When flush is complete, shut and cap RHR Pump 1A(1B/1C) Seal Cooler Outlet Vent, 2CCP*V87 (V937/V919).

6.5   Open RBCLC From RHR P1A(P1B/P1C) Seal & Bearing Cooler, 2CCP*AOV37A(B), at P601.

7.0   <u>Manual Control of TV-108</u>   TCN-6

7.1   If air is to be isolated to Reactor Building or to TV-108 proceed as follows prior to securing air.

7.1.1   Align the valve handwheel so that the engaging handle can be engaged; and engage it.

7.1.2   Open the yellow handled equalizing valve on the air operator.

7.1.3   Shut the two instrument isolation valves on the instrument structural support steel.

7.1.4   Monitor heat exchanger outlet temperature and control as required via the valve handwheel.

7.2   If air is lost prior to engaging handwheel

7.2.1   Position valve handwheel to allow engaging the engage handle.

7.2.3   Operate the valve handwheel as required to control temperature.

7.3   <u>To Return to Normal</u> when air is restored

7.3.1   Align valve handwheel to permit easy disengagement of the engage handle.

7.3.2   Open both instrument isolation valves on structural support.

7.3.3   Shut the equalizing valve - monitor temperature.
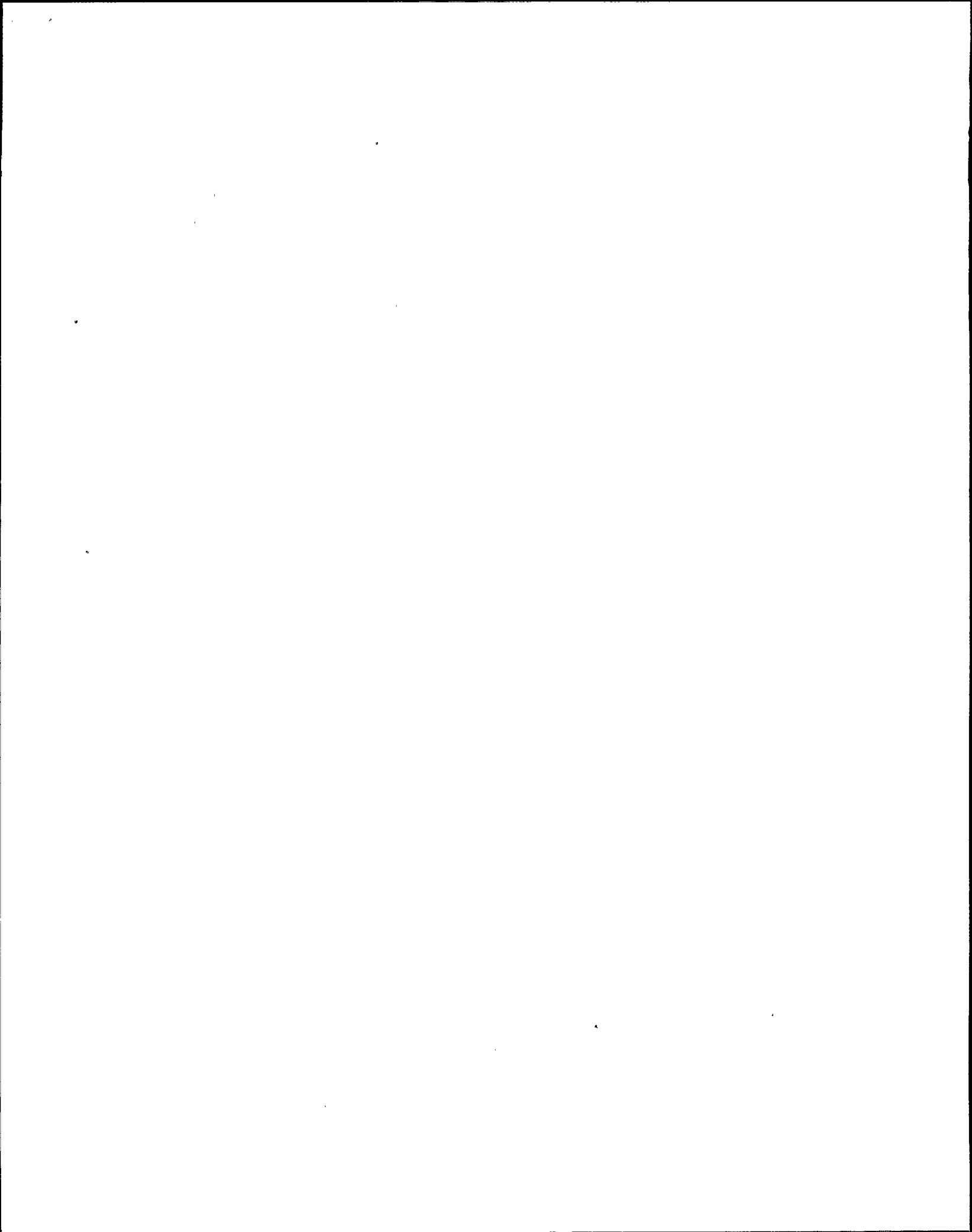
8.0   RBCLC Feed and Bleed via Rx Bldg Floor Drains |TCN. 25

        NOTE: This evolution will normally be entered when requested
                 by the Chemistry Department.

        NOTE: It is preferable to perform a feed and bleed via the |TCN. 25
                 equipment drains (Sect. H.9.0).   .

8.1   Notify Rad Protection that a feed and bleed is to be commenced
        on RBCLC and a hose is to be routed to the floor drain on Rx.
        Bldg. 196' El.

8.2   Notify Rad Waste that a feed and bleed is to be commenced on the
        RBCLC system draining to Rx. Bldg. 196' El. floor drains.

8.3   Remove the cap from CCP-V263 (V262, V261) depending on which
        heat exchanger is in service. (Use an in-service heat exchanger)

8.4   Attach a suitable hose and fitting to the valve whose cap was
        removed in Step 8.3 and route the hose to the nearest floor
        drain.

8.5   Throttle open CCP-V263 (V262, V261). Ensure the valve is not
        opened so far that RBCLC makeup or floor drain capacity is
        exceeded.

8.6   When requested by Chemistry or when the feed and bleed is
        otherwise complete, shut CCP-V263 (V262, V261).

8.7   With Rad Protection concurrence, remove and store the drain hose.

8.8   Replace the cap on CCP-V263 (V262, V261).

8.9   Request that Chemistry sample RBCLC for conductivity as required.

9.0   RBCLC Feed and Bleed via Rx Bldg Equipment Drains

        NOTE: This evolution will normally be entered when requested
                 by the Chemistry Department.

9.1   Notify Rad Waste that a feed and bleed is to be commenced on the
        RBCLC system draining to Rx Bldg Equipment Drain Tank 2B.   TCN. 25

        NOTE: It is preferable to drain from the suction side of a
                 non-running RBCLC Booster pump.

9.2   Throttle open CCP-V813 (V815, V817), suction line drain to
        CCP-P3A (P3B, P3C). Ensure the valve is not opened so far that
        RBCLC makeup, equipment drain capacity or low suction pressure
        trip of the CCP pumps are exceeded.

9.3   When requested by Chemistry or when feed and bleed is otherwise
        complete, shut CCP-V813 (V815, V817).

9.4   Request that Chemistry sample RBCLC for conductivity as required.
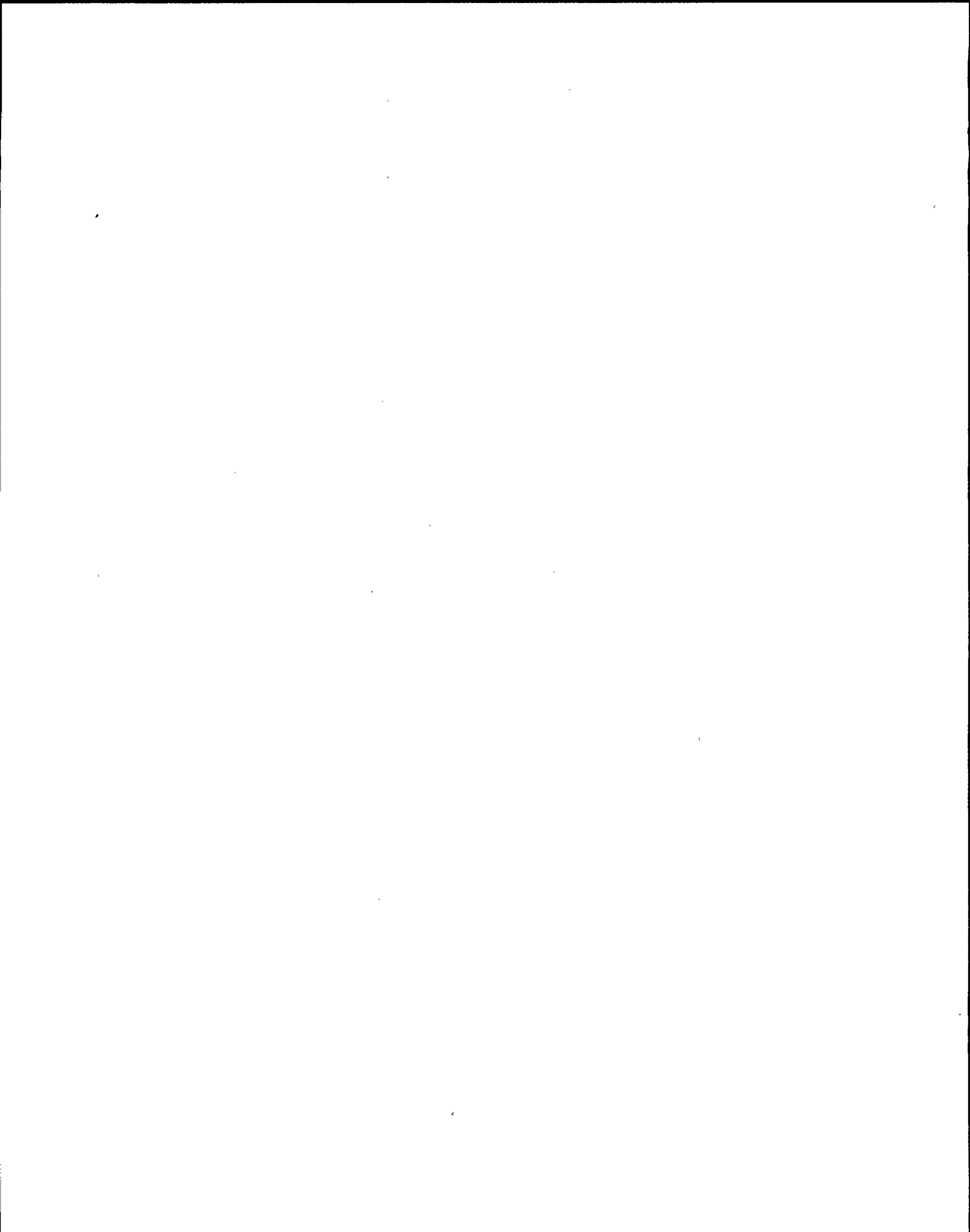
I. <u>PROCEDURE FOR CORRECTING ALARM CONDITIONS (Cont.)</u>

1.0   <u>601205</u>   Division I RBCLCW Isolation Valves Inoperable

<u>Reflash: No</u>

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┌──────────────────────────┐    ┌─┬─┬─┬─┬─┬─┬─┬─┐
│                          │    │·│ │ │ │█│ │ │ │
│                          │    ├─┼─┼─┼─┼─┼─┼─┼─┤
│   DIVISION I             │    │ │ │ │ │ │ │ │ │
│   RBCLCW                 │    ├─┼─┼─┼─┼─┼─┼─┼─┤
│   ISOL VALVES            │    │ │ │ │ │ │ │ │ │
│   INOPERABLE             │    ├─┼─┼─┼─┼─┼─┼─┼─┤
│                          │    │ │ │ │ │ │ │ │ │
│                          │    ├─┼─┼─┼─┼─┼─┼─┼─┤
│                601205    │    │ │ │ │ │ │ │ │ │
│                          │    └─┴─┴─┴─┴─┴─┴─┴─┘
└──────────────────────────┘              601205
```

1.1   <u>Computer Point</u>   <u>Computer Printout</u>   <u>Source</u>

    a. CCPBC07   DIV I RBCLCW   1. RBCLC FROM RECIRC   ☆ 4
                ISOL VALVES   PUMP 1A CLRS CCP*MOV15A
                                        (P602)

                                        2. RBCLC FROM RECIRC
                                          PUMP 1B CLRS CCP*MOV15B
                                          (P602)

                                        3. RBCLC TO RECIRC
                                        PUMP 1A CLRS CCP*MOV17A
                                          (P602)

                                        4. RBCLC TO RECIRC
                                        PUMP 1B CLRS CCP*MOV17B
                                          (P602)

                                        5. RBCLC TO DW CLR IV
                                        CCP*MOV265 (P873)

                                        6. RBCLC FR DW CLR IV
                                        CCP*MOV124 (P873)

1.2   <u>Corrective Action</u>

    a.   Refer to the following INOP windows for response:

    b.   Refer to Technical Specifications.

<u>NOTE:</u>   The individual INOP status window energizes on valve loss of control power. The annunciator (601205) energizes on valve loss of control power coincident with the associated valve not full shut.

Window	Source	Automatic Response
		NONE
1. RBCLC FROM RECIRC PUMP 1A CLRS CCP*MOV15A	RBCLC From Recirc Pump 1A Coolers, 2CCP*MOV15A, loss of control power. As sensed by 74-2CCPA19.	NOTE: Coincident with valve not full shut, annunciator 601205 energizes.

Corrective Action

a. Verify 2CCP*MOV15A power supply lineup per Table II and control power fuse installed.

Window	Source	Automatic Response
		NONE
2. RBCLC FROM RECIRC PUMP 1B CLRS CCP*MOV15B	RBCLC From Recirc Pump 1B Coolers, 2CCP*MOV15B, loss of control power. As sensed by 74-2CCPB19.	NOTE: Coincident with valve not full shut, annuncia- 601205 energizes.

Corrective Action

a. Verify 2CCP*MOV15B power supply lineup per Table II and control power fuse installed.

Window	Source	Automatic Response
		NONE
3. RBCLC TO RECIRC PUMP 1A CLRS CCP*MOV17A	RBCLC To Recirc Pump 1A Coolers, 2CCP*MOV17A, loss of control power. As sensed by 74-2CCPB18.	NOTE: Coincident with valve not full shut, annuncia- 601205 energizes.

Corrective Action

a. Verify 2CCP*MOV17A power supply lineup per Table II and control power fuse installed.

Window	Source	Automatic Response
		NONE
4. RBCLC TO RECIRC PUMP 1B CLRS CCP*MOV17B	RBCLC To Recirc Pump 1B Coolers, 2CCP*MOV17B, loss of control power. As sensed by 74-2CCPB18.	NOTE: Coincident with valve not full shut, annuncia- 601205 energizes.

Corrective Action

a. Verify 2CCP*MOV17B power supply lineup per Table II and control power fuse installed.

Window	Source	Automatic Response
5. RBCLC TO DW CLR IV CCP*MOV265	RBCLC To DW Coolers Outboard IV, 2CCP*MOV265, loss of control power. As sensed by 74-2CCPN03.	NONE NOTE: Coincident with valve not full shut, annuncia- 601205 energizes.

Corrective Action

a. Verify 2CCP*MOV265 power supply lineup per Table II and control power fuse installed.

Window	Source	Automatic Response
6. RBCLC FR DW CLR IV CCP*MOV124	RBCLC To DW Coolers Outboard IV, 2CCP*MOV124 loss of control power. As sensed by 74-2CCPN15.	NONE NOTE: Coincident with valve not full shut, annuncia- 601205 energizes.

Corrective Action

a. Verify 2CCP*MOV124 power supply lineup per Table II and control power fuse installed.
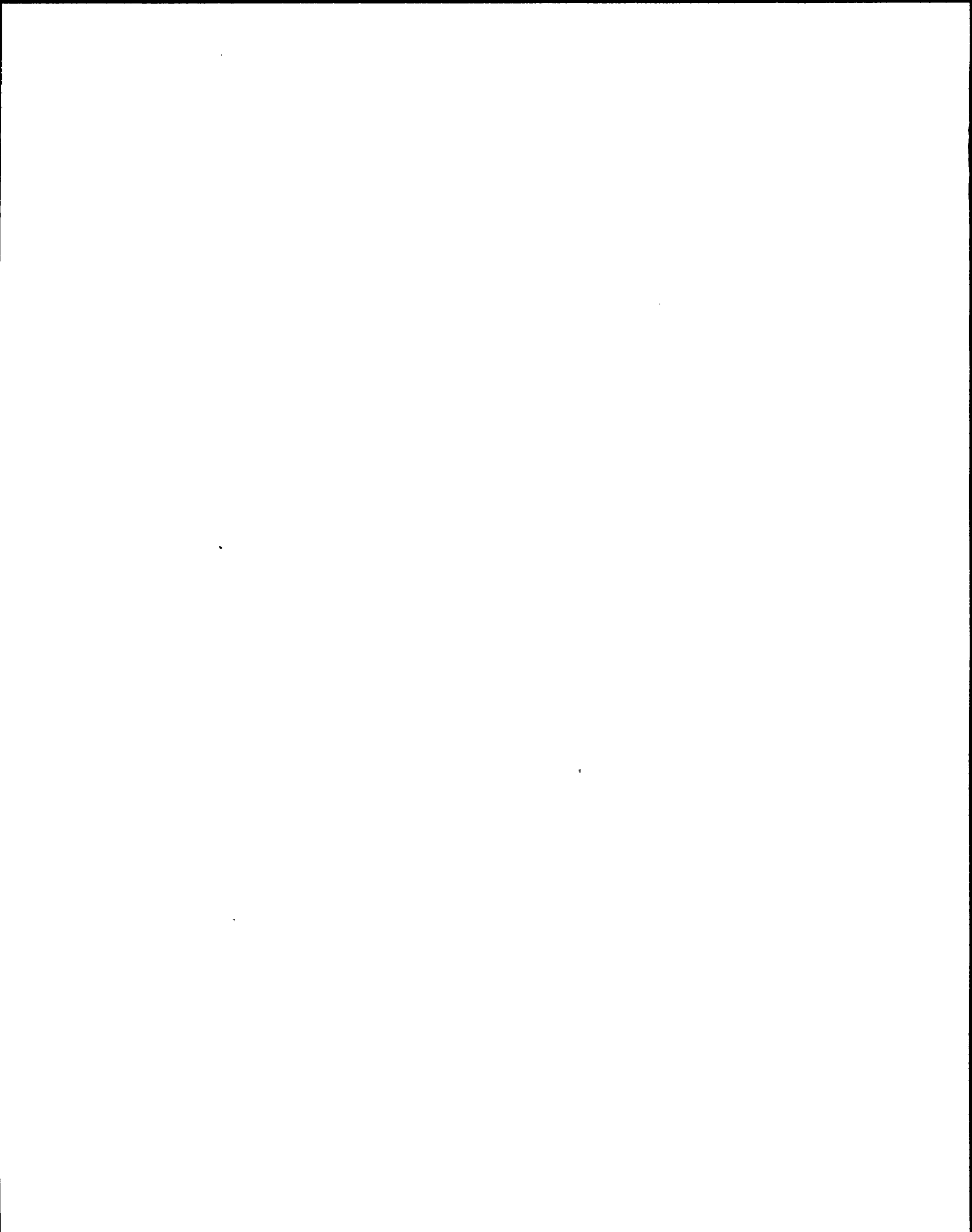
I. <u>PROCEDURE FOR CORRECTING ALARM CONDITIONS</u> (Cont.)

2.0   <u>601206</u>   Division II RBCLCW Isolation Valves Inoperable

<u>Reflash: No</u>

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+----------------------+
|                      |
|                      |
|   DIVISION II        |
|   RWCLCW             |
|   ISOL VALVES        |
|   INOPERABLE         |
|                      |
|               601206 |
|                      |
+----------------------+
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601206

2.1   <u>Computer Point</u>   <u>Computer Printout</u>   <u>Source</u>

a. CCPBC08   DIV 2 RBCLCW   1. RBCLC FROM RECIRC   * 4
                    ISOL VALVES   PUMP 1A CLRS
                                             CCP*MOV16A (P602)

                                          2. RBCLC FROM RECIRC
                                             PUMP 1B CLRS
                                             CCP*MOV16B
                                             (P602)

                                          3. RBCLC TO RECIRC
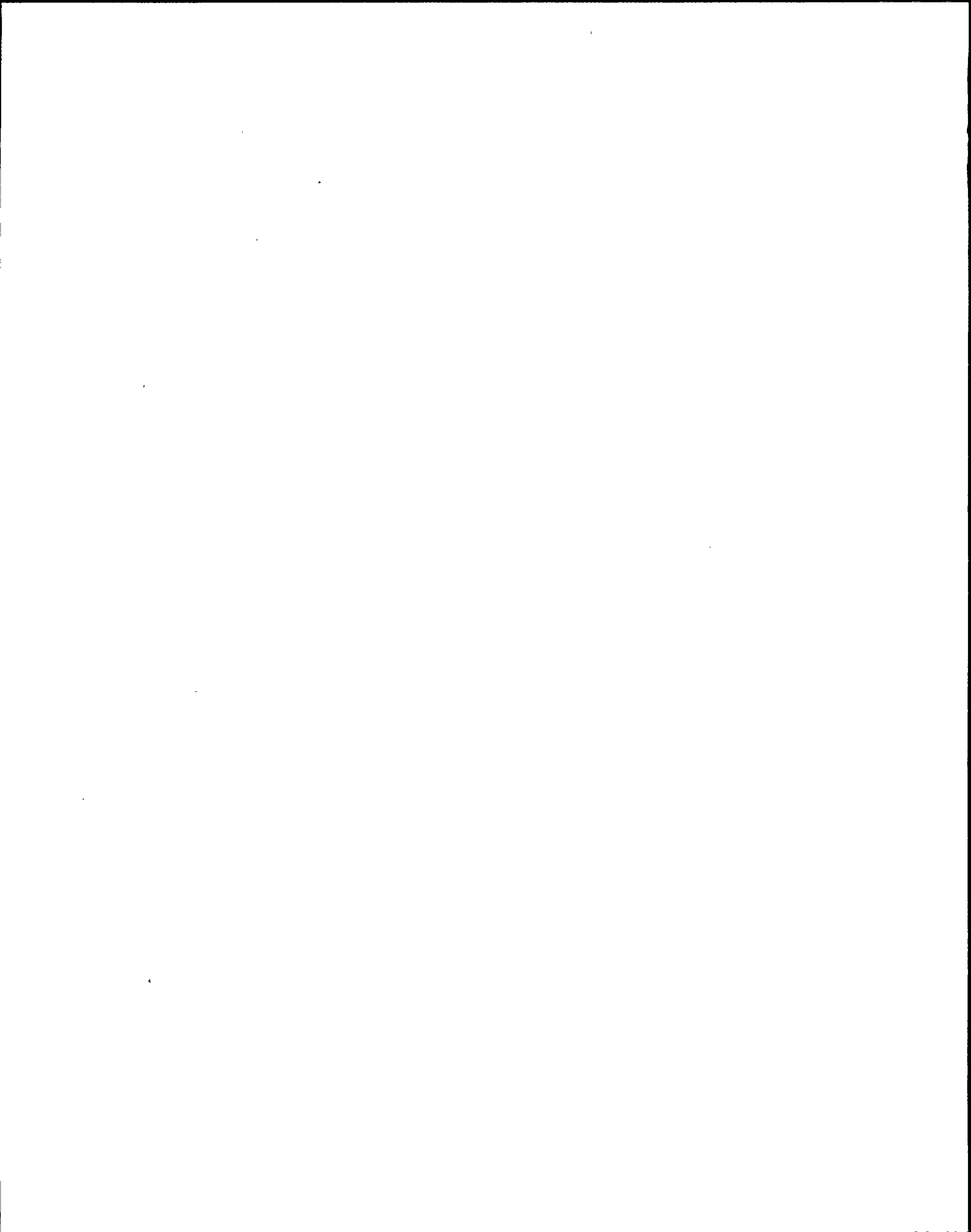   PUMP 1A CLRS
                                             CCP*MOV94A
                                             (P602)

                                          4. RBCLC TO RECIRC
                                             PUMP 1B CLRS
                                             CCP*MOV94B
                                             (P602)

                                          5. RBCLC TO DW CLR IV
                                             CCP*MOV273 (P873)

                                          6. RBCLC FR DW CLR IV
                                             CCP*MOV122 (P873)
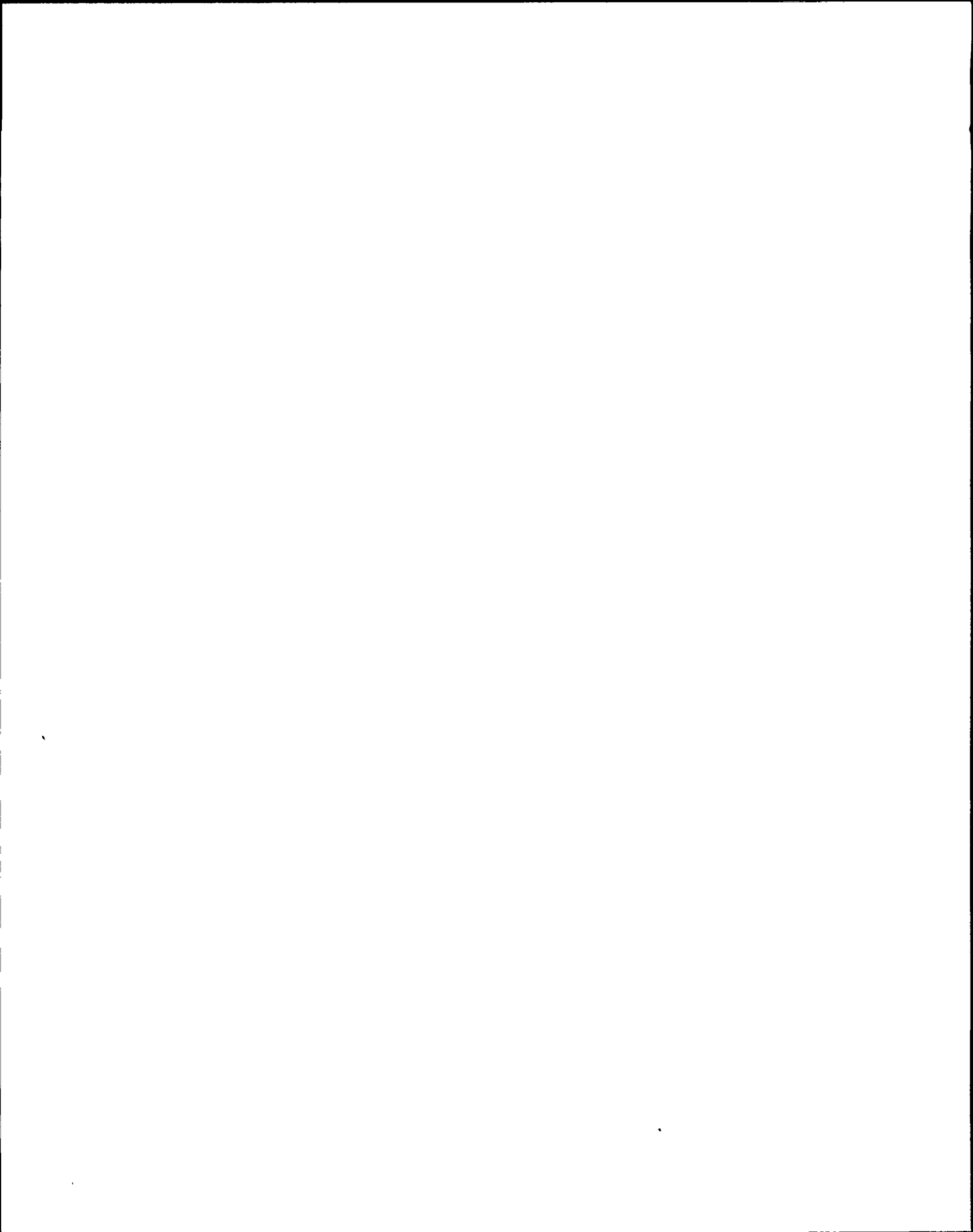
2.2   Corrective Action

a. Refer to the following INOP windows for response:

b. Refer to Technical Specifications.

NOTE: The individual INOP status window energizes on valve loss of
control power. The annunciator (601206) energizes on valve loss
of control power coincident with the associated valve not full
shut.

Window	Source	Automatic Response
		NONE
1. RBCLC FROM RECIRC PUMP 1A CLRS CCP*MOV16A	RBCLC From Recirc Pump 1A Coolers, 2CCP*MOV16A, loss of control power. As sensed by 74-2CCPA14.	NOTE: Coincident with valve not full shut, annunciator 601206 energizes.

Corrective Action

a. Verify 2CCP*MOV16A power supply lineup per Table II and
control power fuse installed.

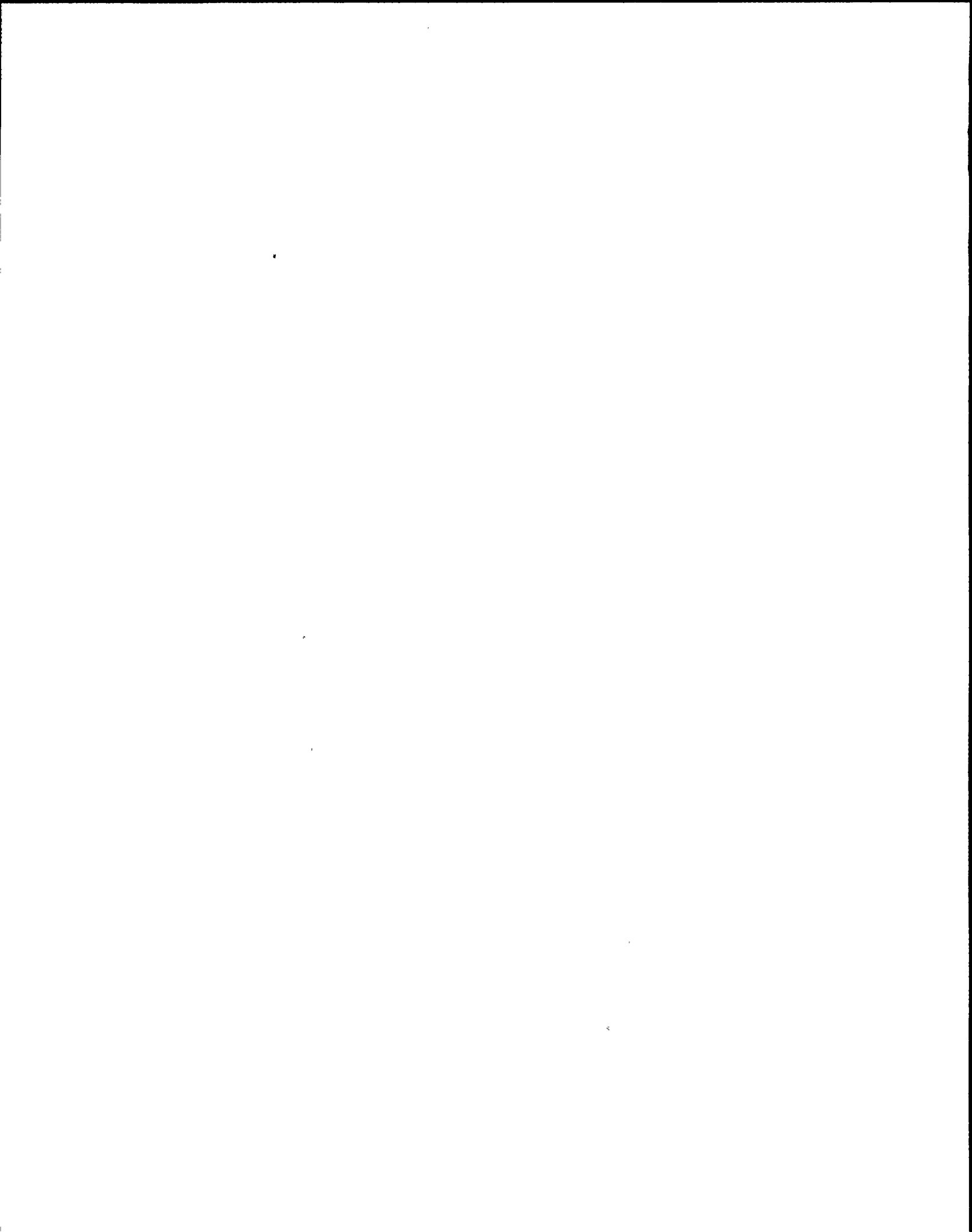| Window	Source	Automatic Response
		NONE
2. RBCLC FROM RECIRC PUMP 1B CLRS CCP*MOV16B	RBCLC From Recirc Pump 1B Coolers, 2CCP*MOV16B, loss of control power. As sensed by 74-2CCPB14.	NOTE: Coincident with valve not full shut, annunciator 601206 energizes.

Corrective Action

a. Verify 2CCP*MOV16B power supply lineup per Table II and
control power fuse installed.

Window	Source	Automatic Response
		NONE
3. RBCLC TO RECIRC PUMP 1A CLRS CCP*MOV94A	RBCLC To Recirc Pump 1A Coolers, 2CCP*MOV94A, loss of control power. As sensed by 74-2CCPA20.	NOTE: Coincident with valve not full shut, annunciator 601206 energizes.
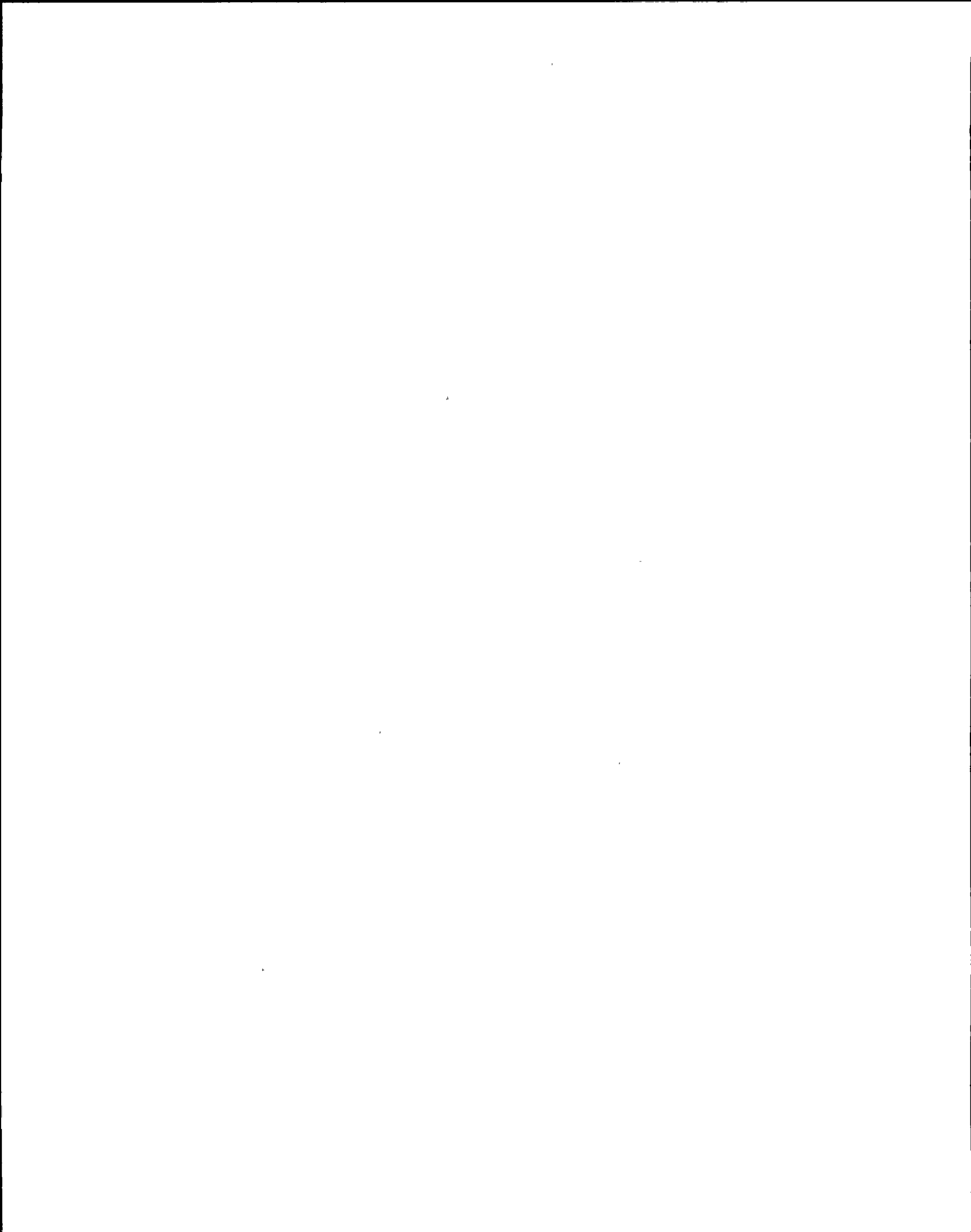
Corrective Action

a.   Verify 2CCP*MOV94A power supply lineup per Table II and control power fuse installed.

Window	Source	Automatic Response
4. RBCLC TO RECIRC PUMP 1B CLRS CCP*MOV94B	RBCLC To Recirc Pump 1B Coolers, 2CCP*MOV94B, loss of control power. As sensed by 74–2CCPB20.	NONE NOTE: Coincident with valve not full shut, annunciator 601206 energizes.

Corrective Action

a.   Verify 2CCP*MOV94B power supply lineup per Table II and control power fuse installed.

| Window	Source	Automatic Response
5. RBCLC TO DW CLR IV CCP*MOV273	RBCLC To DW Coolers Inbd IV, 2CCP*MOV273, loss of control power. As sensed by 74–2CCPN13.	NONE NOTE: Coincident with valve not full shut, annunciator 601206 energizes.

Corrective Action

a.   Verify 2CCP*MOV273 power supply lineup per Table II and control power fuse installed.

Window	Source	Automatic Response
6. RBCLC FR DW CLR IV CCP*MOV122	RBCLC From DW Coolers Inbd IV, 2CCP*MOV122, loss of control power. As sensed by 74–2CCPN05.	NONE NOTE: Coincident with valve not full shut, annunciator 601206 energizes.

Corrective Action

a.   Verify 2CCP*MOV122 power supply lineup per Table II and control power fuse installed.
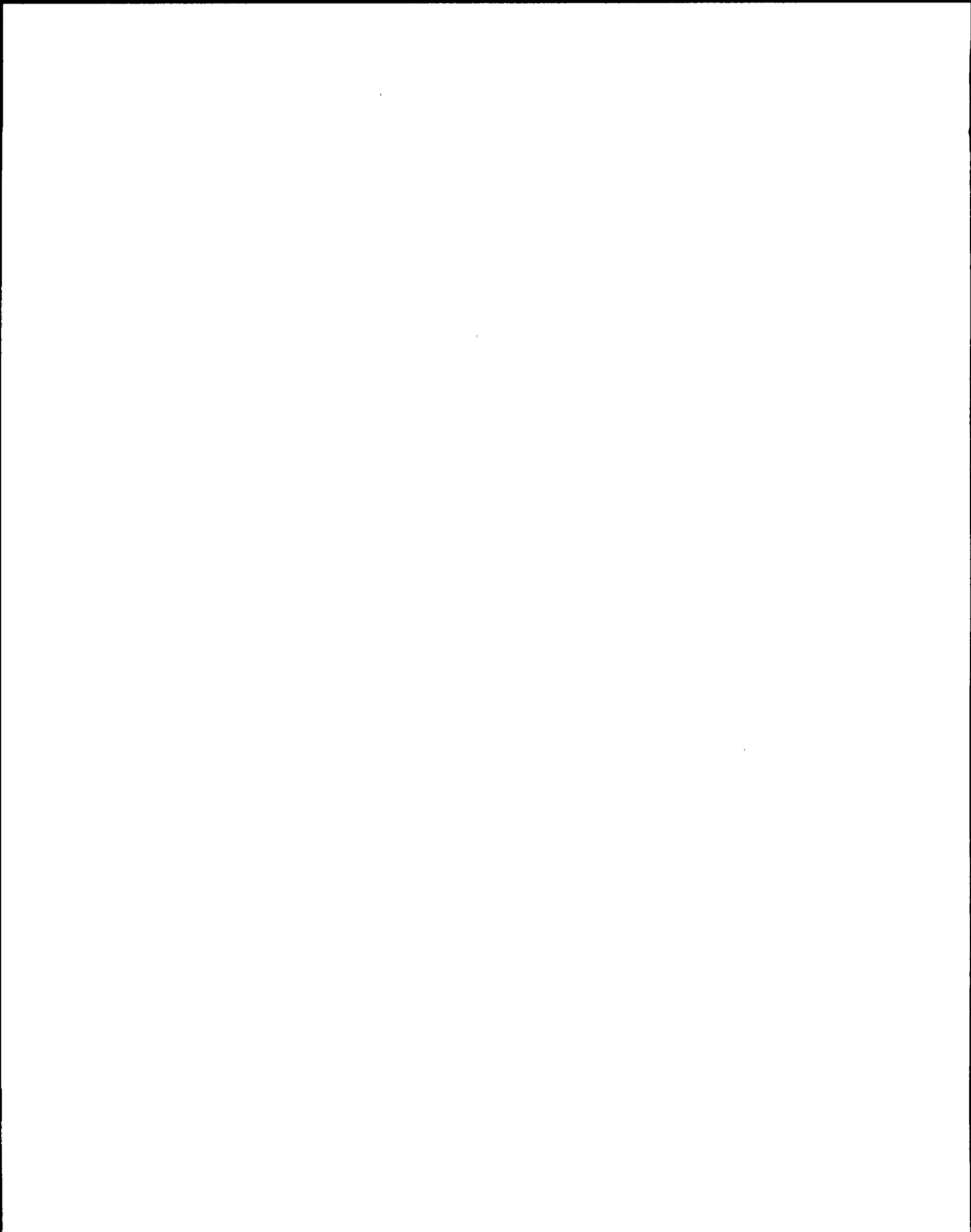
3.0   601231   RBCLCW Pumps 3A/3B/3C Automatic Start

Reflash: No

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┌──────────────────────┐
│                      │
│                      │
│   RBCLCW             │
│   PUMPS             │
│   3A/3B/3C          │
│   AUTO START        │
│                      │
│            601231   │
└──────────────────────┘
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601231
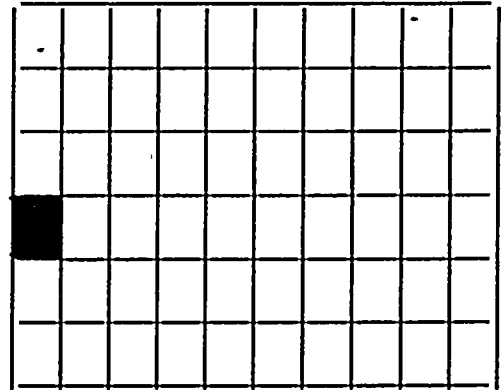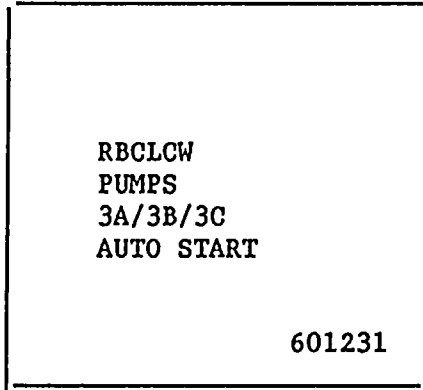
3.1   Computer Point   Computer Printout   Source

a. CCPBC13   RBCLCW P3A/B/C   RBCLC Booster Pump   *4
                        A/START   P3A, B or C control
                                              switch in normal
                                              after "STOP" and
                                              pump breaker shut.

3.2   Automatic Response

a.   NONE

3.3   Corrective Action

a.   Verify RBCLC Pumps Disch Header Press greater than 60 psig,
      at P601.

b.   Clear annunciator by taking running RBCLC Booster Pump P3A
      (B)(C) control switch momentarily to "START," at P601.
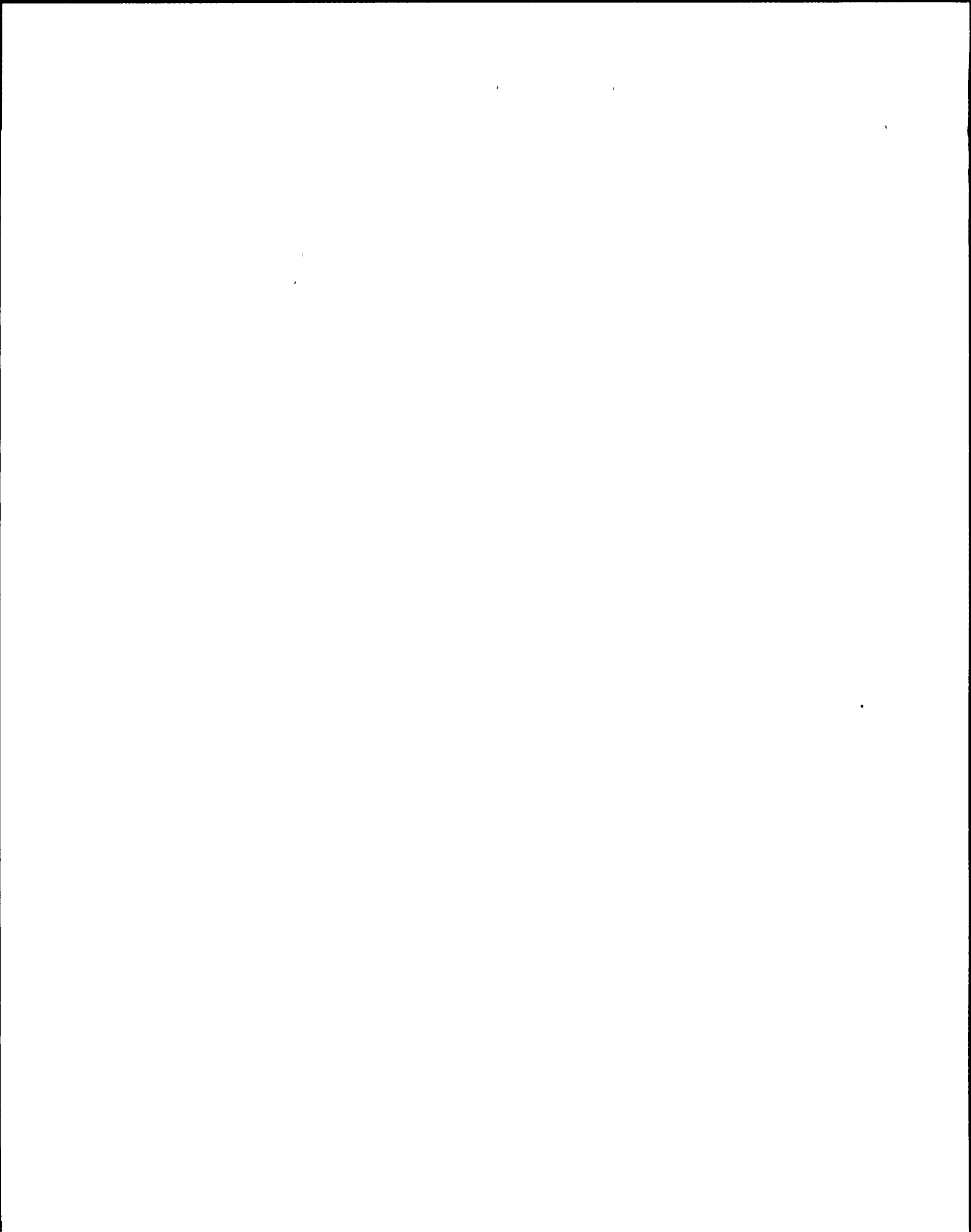
4.0   601232   RBCLCW Pumps 3A/3B/3C Auto Trip/Fail to Start

Reflash: No

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┌─────────────────────┐
│                     │
│                     │
│  RBCLCW             │
│  PUMPS 3A/3B/3C     │
│  AUTO TRIP/         │
│  FAIL TO START      │
│                     │
│             601232  │
│                     │
└─────────────────────┘
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601232
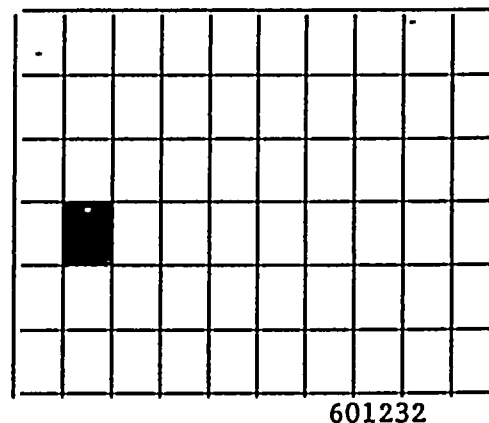
4.1   Computer Point   Computer Printout   Source

a. CCPUC08   BSTR PMPS P3A,B,C   RBCLC Booster   ⋆ 4
                AT/FTS   Pump P3A,B,C start
                                       signal received
                                       and pump breaker
                                       not shut, or
                                       suction pressure
                                       less than 5 psig.

4.2   Automatic Response

a. Standby RBCLC Booster Pump will auto start if previously running pump tripped on motor electrical fault.

b. Standby RBCLC Booster Pump will auto start if associated low discharge pressure exists less than 60 psig for 5 seconds.

4.3   Corrective Actions

a. Verify RBCLC Booster Pumps Disch Header Press greater than 60 psig, at P601.

b. Start additional RBCLC Booster Pump P3A(B)(C) as required, at P601.

c. For a total loss of RBCLC refer to section H of this procedure.

d. Clear annunciator by taking the associated RBCLC Booster Pump P3A(B)(C) control switch momentarily to "STOP" at P601.
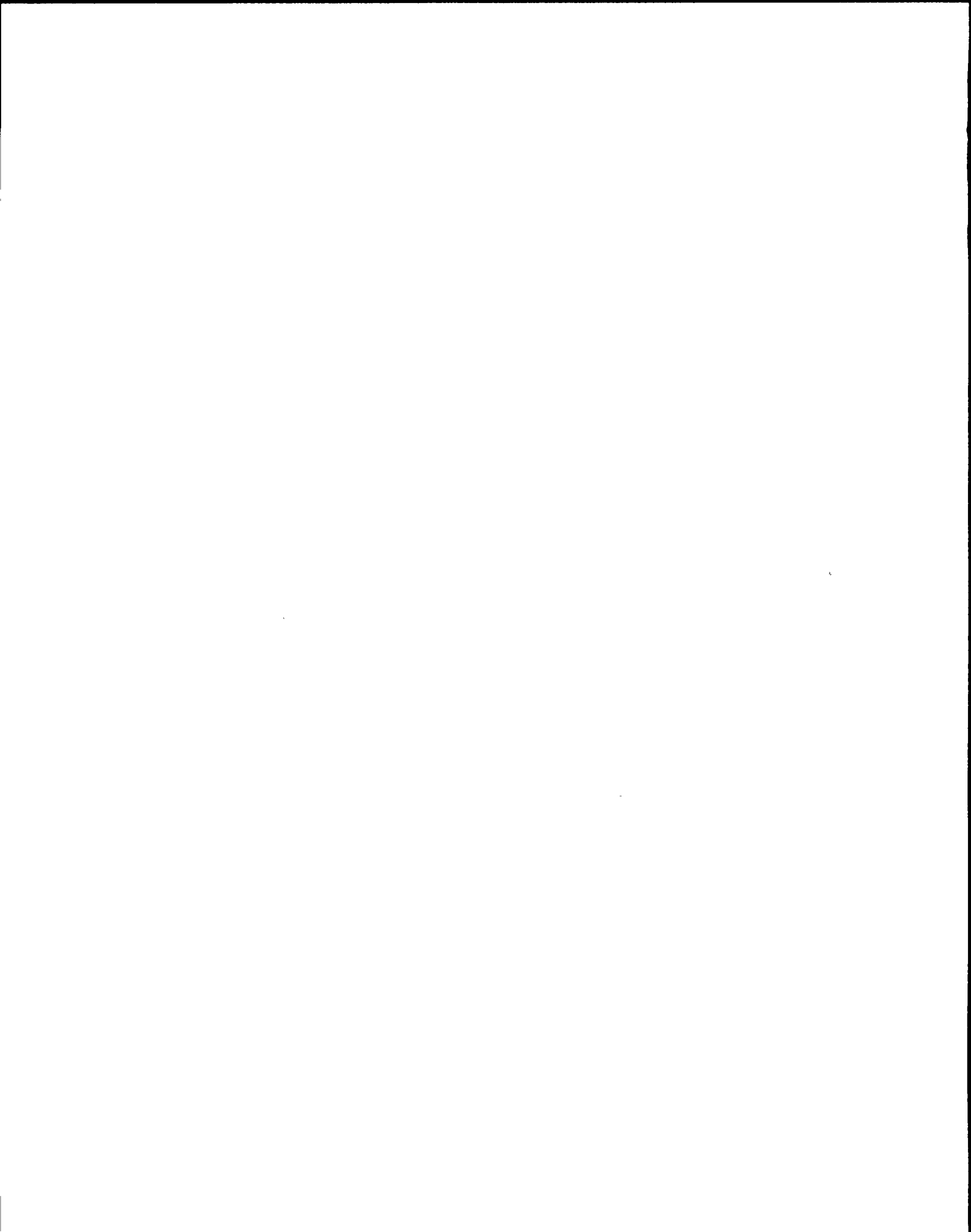
5.0   <u>601233</u>   RBCLCW Booster Pumps 3A/3B/3C Motor Overload

<u>Reflash: Yes</u>

```
RBCLCW
PUMPS 3A/3B/3C
MOTOR
OVERLOAD


                      601233
```

601233

5.1   <u>Computer Point</u>   <u>Computer Printout</u>   <u>Source</u>
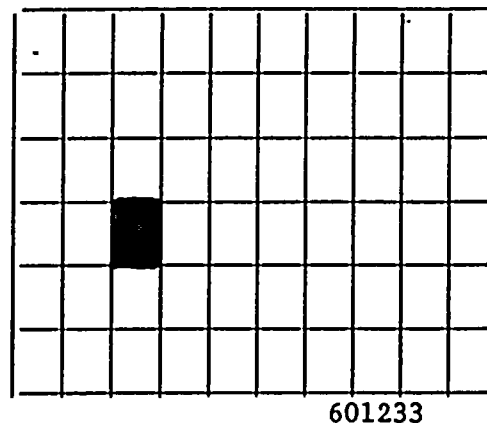
	Computer Point	Computer Printout	Source	
a.	CCPTC53	RBCLCW BSTR PMP 3A MOT	RBCLC Booster Pump P3A motor overload. As sensed by 51X-2CCPA57.	* 4
b.	CCPTC54	RBCLCW BSTR PMP 3B MOT	RBCLC Booster Pump P3B motor overload. As sensed by 51X-2CCPB57.	*4
c.	CCPTC55	RBCLCW BSTR PMP 3C MOT	RBCLC Booster Pump P3C motor overload. As sensed by 51X-2CCPC57.	*4

5.2   <u>Automatic Response</u>

a.   Affected RBCLC Booster Pump P3A(B)(C) trips.

b.   Standby RBCLC Booster Pump P3A(B)(C) auto starts.

5.3   <u>Corrective Action</u>

a.   Verify automatic response at P601.

b.   Verify running RBCLC Booster Pump P3A(B)(C) Current less than 20 amps, at P601.

c.   Place affected RBCLC Booster Pump P3A(B)(C) control switch in pull-to-lock.

d.   Prior to restarting the affected RBCLC Booster Pump P3A(B)(C), reset 86-Lockout relay locally at pump breaker, per Table II.
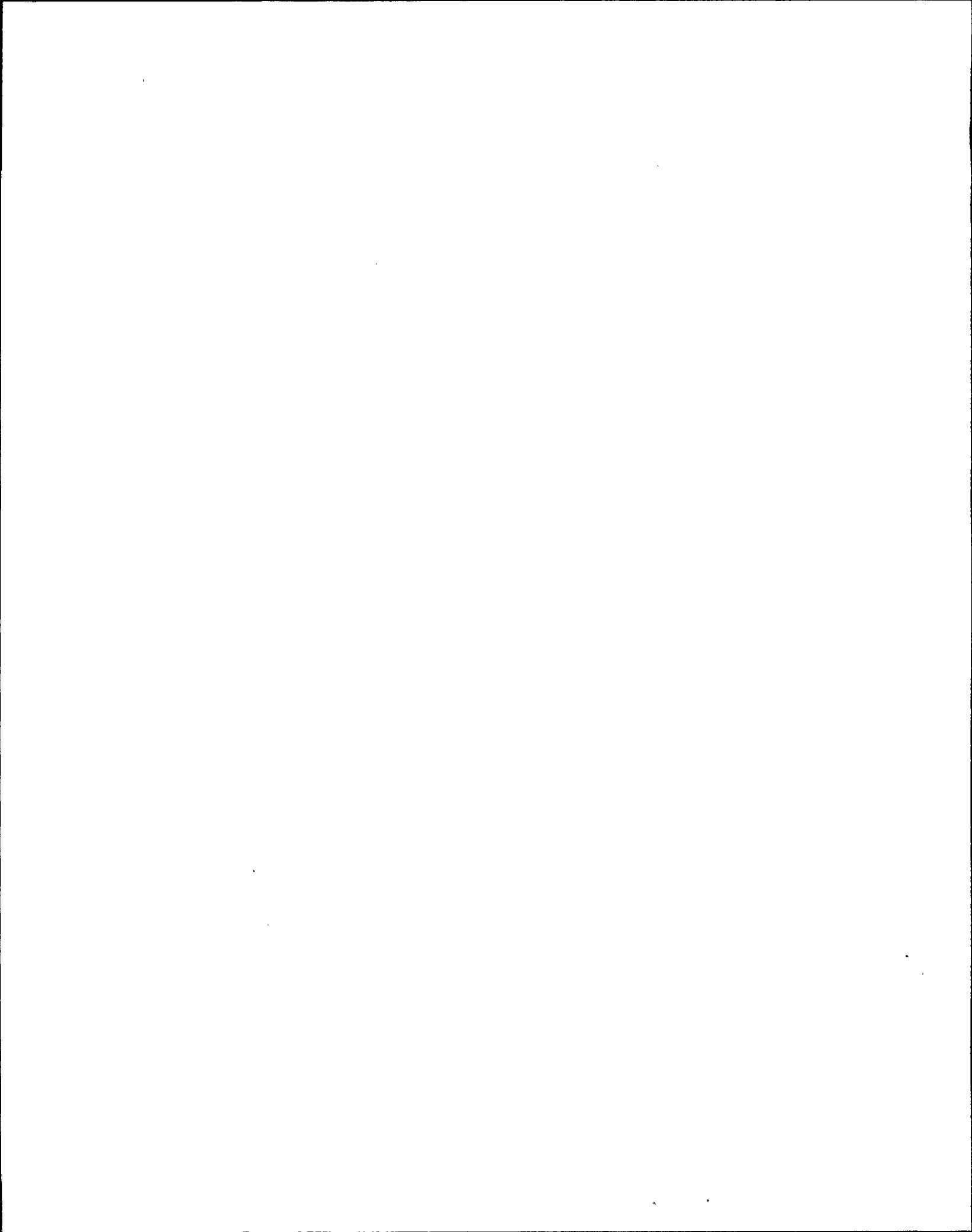
I. PROCEDURE FOR CORRECTING ALARM CONDITIONS (Cont.)

6.0   601234   RBCLCW Pumps 3A/3B/3C Discharge Pressure Low

Reflash: Yes

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+-------------------------------+
|                               |
|                               |
|  RBCLCW                       |
|  PUMPS 3A/3B/3C               |
|  DISCH PRESS                  |
|  LOW                          |
|                               |
|                               |
|                  601234       |
+-------------------------------+
```
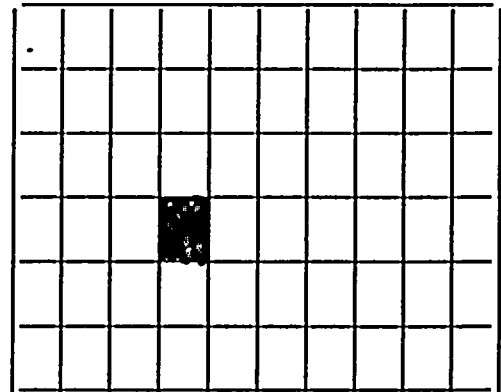
601234

6.1

Computer Point	Computer Printout	Source
a. CCPPC11	RBCLCW BSTR P3A SUCT PR	RBCLC Booster Pump discharge header pressure less than 60 psig. As sensed by 2CCP-PS47A.
b. CCPPC12	RBCLCW BSTR P3B SUCT PR	RBCLC Booster Pump discharge header pressure less than 60 psig. As sensed by 2CCP-PS47B.
c. CCPPC13	RBCLCW BSTR P3C SUCT PR	RBCLC Booster Pump discharge header pressure less than 60 psig. As sensed by 2CCP-PS47C.

6.2   Automatic Response

a.   The associated RBCLC Booster Pump P3A(B)(C) auto starts.

6.3   Corrective Action

a.   Verify automatic response, at P601.

b.   Verify RBCLC Booster Pump Discharge Pressure greater than 60 psig, at P601.
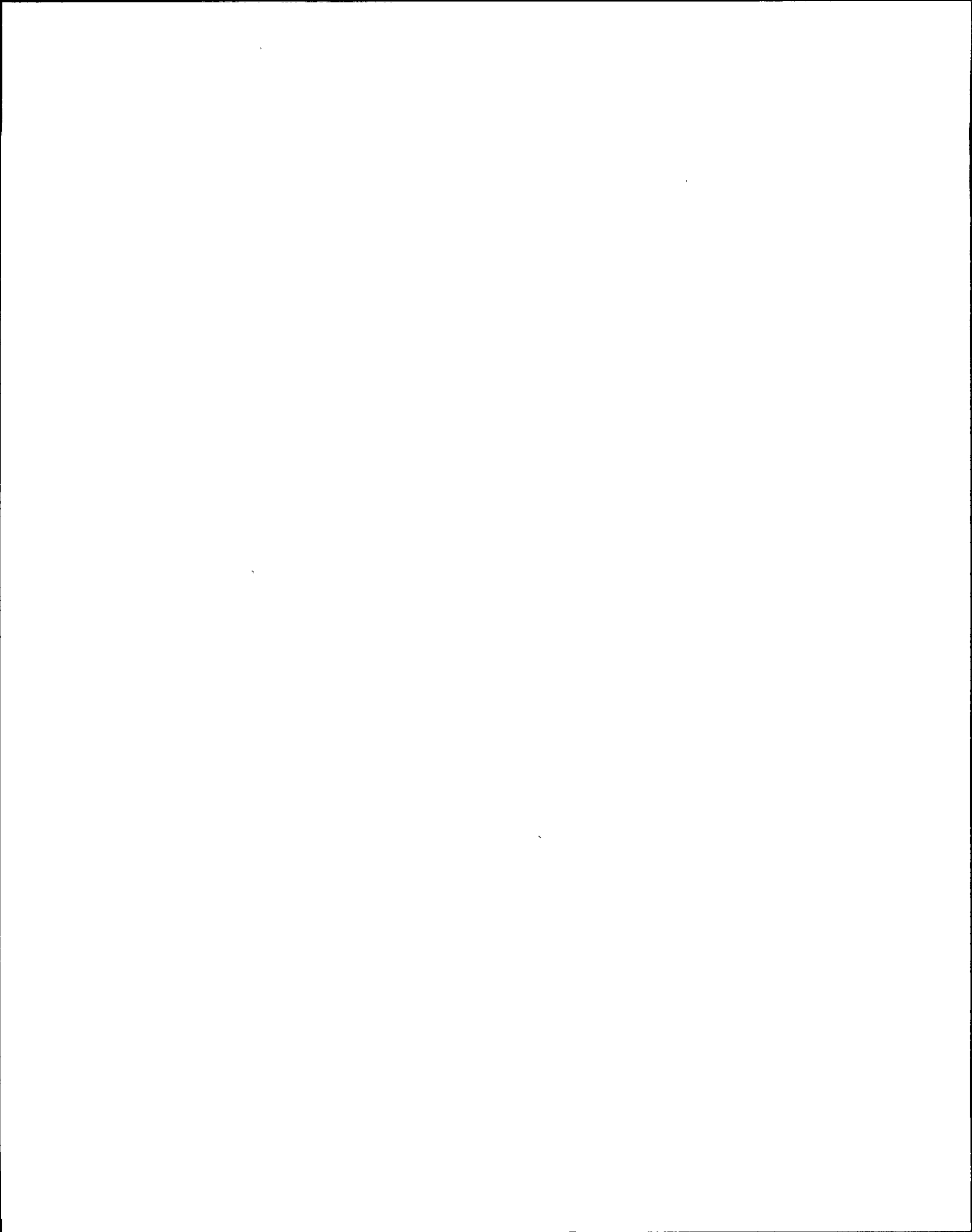
I. PROCEDURE FOR CORRECTING ALARM CONDITIONS (Cont.)

7.0   601246   Reactor Building Closed Loop Cooling System Trouble

Reflash: Yes

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┌─────────────────────────┐
│                         │
│                         │
│   REACTOR BLDG          │
│   CLOSED LOOP           │
│   COOLING SYS           │
│   TROUBLE               │
│                         │
│                         │
│                601246   │
└─────────────────────────┘
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601246

7.1
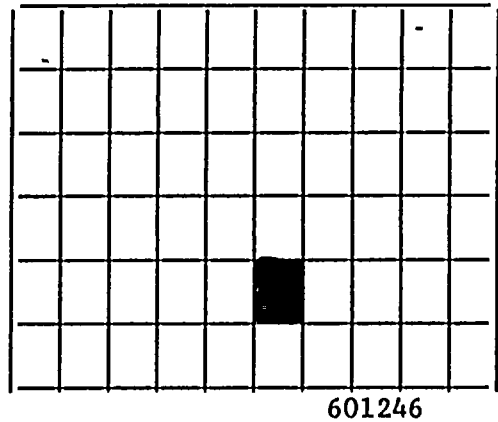
Computer Point	Computer Printout	Source	
a. CCPUC01	RBCLCW PMP P1A MOTOR	RBCLC Pump 1A motor electrical fault. As sensed by 86-2CCPA01.	☆ 4
b. CCPUC02	RBCLCW PMP P1B MOTOR	RBCLC Pump 1B motor electrical fault. As sensed by 86-2CCPB01.	☆ 4
c. CCPUC03	RBCLCW PMP P1C MOTOR	RBCLC Pump 1C motor electrical fault. As sensed by 86-2CCPC01.	☆ 4
d. CCPPC04	RBCLCW PMP 1A SUCT PRES	RBCLC Pump 1A suction pressure less than 0 psig. As sensed by 2CCP-PS67A.	
e. CCPPC05	RBCLCW PMP 1B SUCT PRES	RBCLC Pump 1B suction pressure less than 0 psig. As sensed by 2CCP-PS67B.	
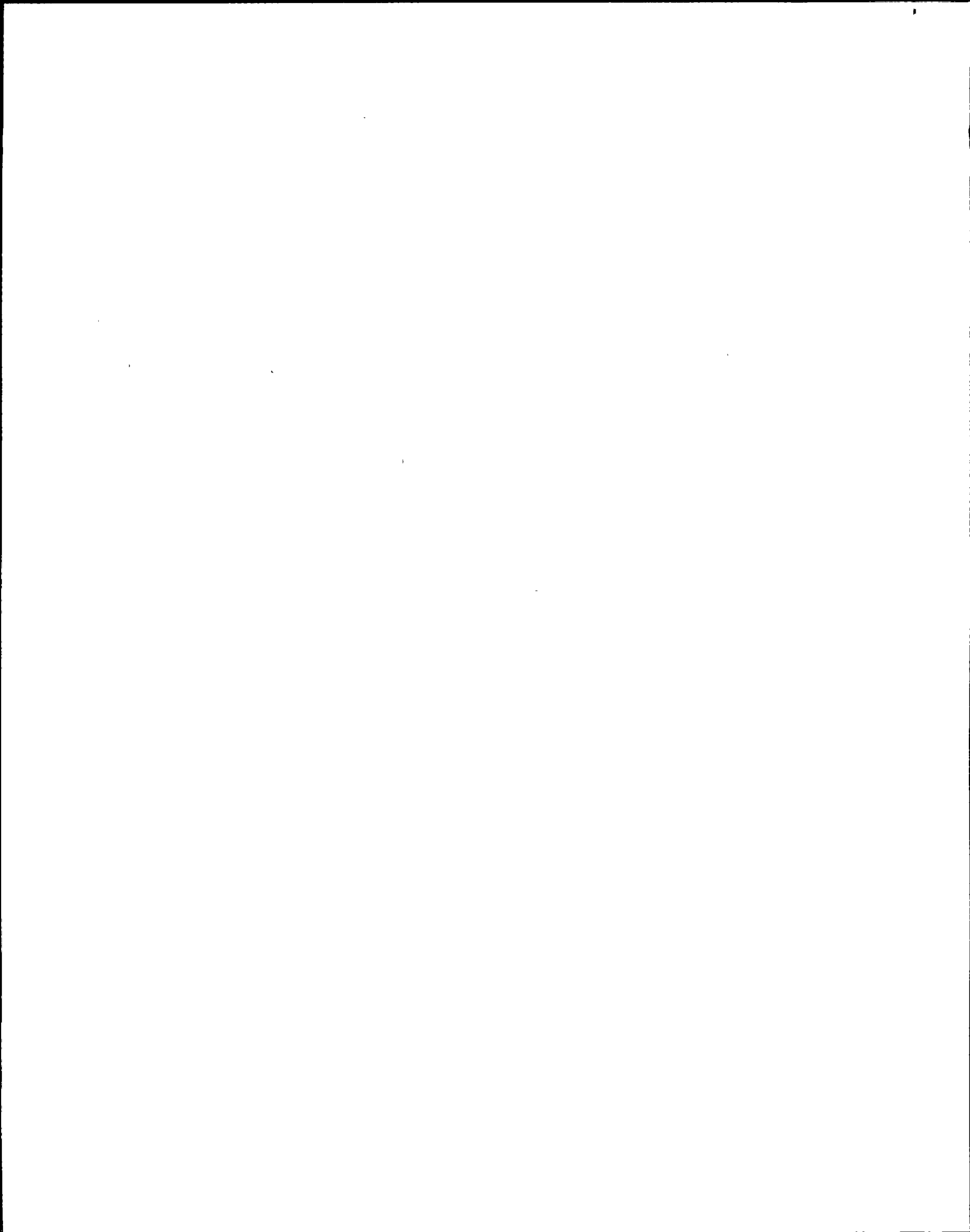
7.1	Computer Point	Computer Printout	Source
f. CCPPC06	RBCLCW PMP 1C SUCT PRES	RBCLC Pump 1C suction pressure less than 0 psig. As sensed by 2CCP–PS67C.
g. CCPUC05	RBCLCW BSTR P3A MOT	RBCLC Booster Pump P3A motor electrical fault. As sensed by 86–2CCPA57.
h. CCPUC06	RBCLCW BSTR P3B MOT	RBCLC Booster Pump P3B motor electrical fault. As sensed by 86–2CCPB57.
i. CCPUC07	RBCLCW BSTR P3C MOT	RBCLC Booster Pump P3C motor electrical fault. As sensed by 86–2CCPC57.
j. CCPPC14	RBCLCW BSTR P3A SUCT PR	RBCLC Booster Pump P3A suction pressure less than 5 psig. As sensed by 2CCP–PS45A.
k. CCPPC15	RBCLCW BSTR P3B SUCT PR	RBCLC Booster Pump P3B suction pressure less than 5 psig. As sensed by 2CCP–PS45B.
l. CCPPC16	RBCLCW BSTR P3C SUCT PR	RBCLC Booster Pump P3C suction pressure less than 5 psig. As sensed by 2CCP–PS45C.

** m. This step has been deleted. |TCN-28

* n. This step has been deleted.

| o. CCPFC03 | RBCLCW FLO BEL 2 PMP LIM | Two RBCLC Pumps running and system flow less than 4000 gpm. As sensed by 2CCP–FT129. |

|TCN-28
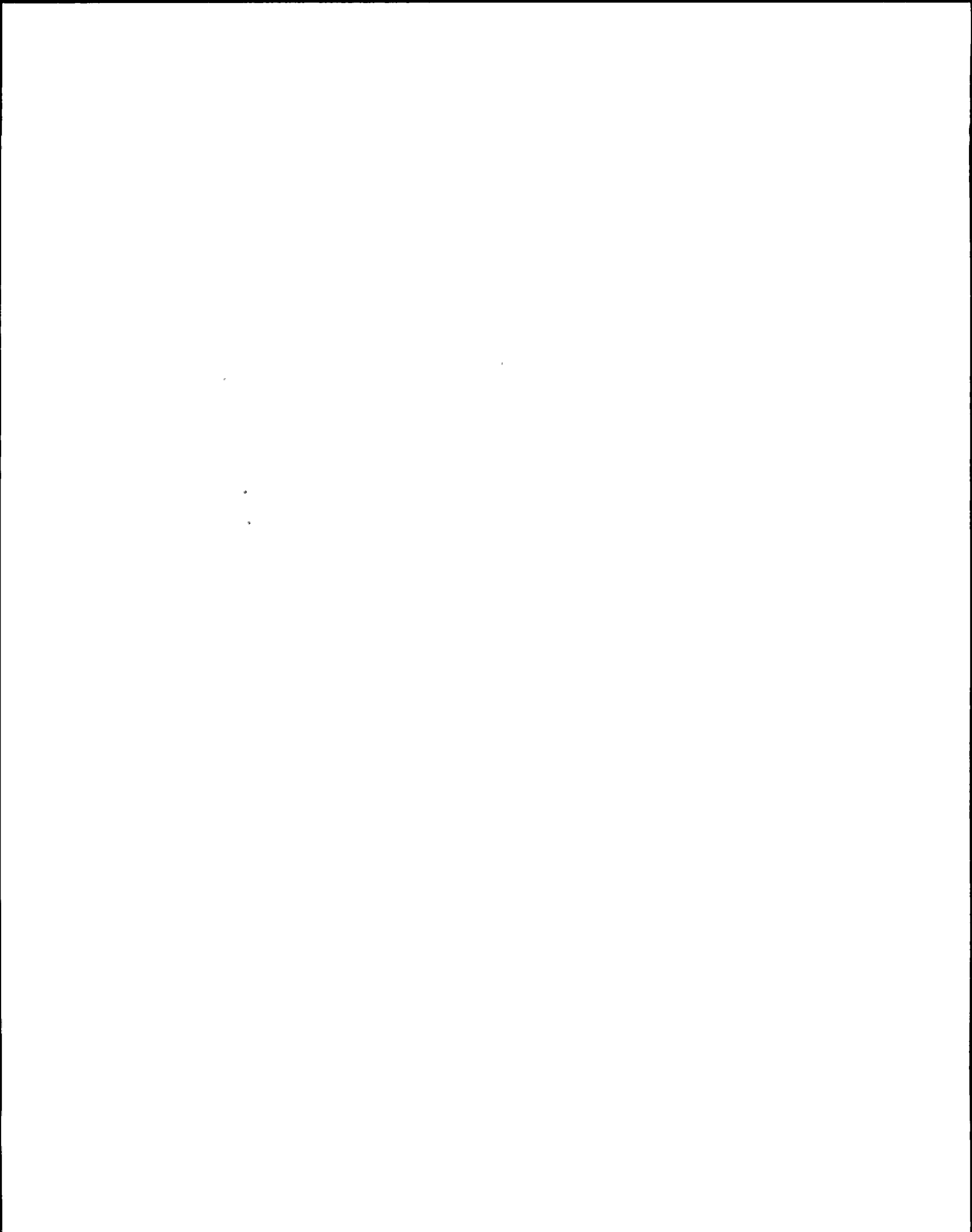
p. CCPFC04   RBCLCW FLO BEL 1   RBCLC system flow   *4
PMP LIM   less than 2000 gpm.
As sensed by
2CCP-FT129.

q. CCPTC04   RBCLCW HX DISCH   RBCLC Heat Exchanger   *4
TEMP   outlet header temperature
greater than 90°F. As
sensed by 2CCP-TE108.

r. CCPZC02   RBCLCW HX BYP   CCP Heat Exchanger TCV,   *4
TV 108   2CCP-TV108, full flow
bypassing heat exchangers.
As sensed by valve
position limit switch.

s. CCPLC02   RBCLCW EXPANSION   CCP Expansion Tank TK1
TK1 LVL   level greater than 12
inches below centerline.
As sensed by 2CCP-LS110.

t. CCPLC01   RBCLCW EXPANSION   CCP Expansion Tank TK1
TK1 LVL   level greater than 30
inches above centerline.
As sensed by 2CCP-LS102.

u. CCPZC01   EXP TK1 LVL   CCP Expansion Tank TK1
2CCP-AOV 120 OPEN   Makeup Valve, 2CCP-   *4
AOV120, open for greater
than 30 minutes.

7.2   <u>Automatic Response</u>

    a.   For the following computer points, the associated RBCLC
Pump P1A(B)(C) trips and the standby RBCLC Pump P1A, B or C
starts:

        1.   CCPUC01(2)(3), RBCLCW PMP P1A(B)(C) MOTOR   *4

        2.   CCPPC04(5)(6), RBCLCW PMP 1A(B)(C) SUCT PRESS

    b.   For the following computer points the associated RBCLC
Booster Pump P3A(B)(C) trips and the standby RBCLC Booster
Pump P3A, B or C starts:

        1.   CCPUC05(6)(7), RBCLCW BSTR P3A(B)(C) MOT   *4

        2.   CCPPC14(15)(16), RBCLCW BSTR P3A(B)(C) SUCT PRESS

7.3   <u>Corrective Action</u>

    a.   For the following, verify automatic response.
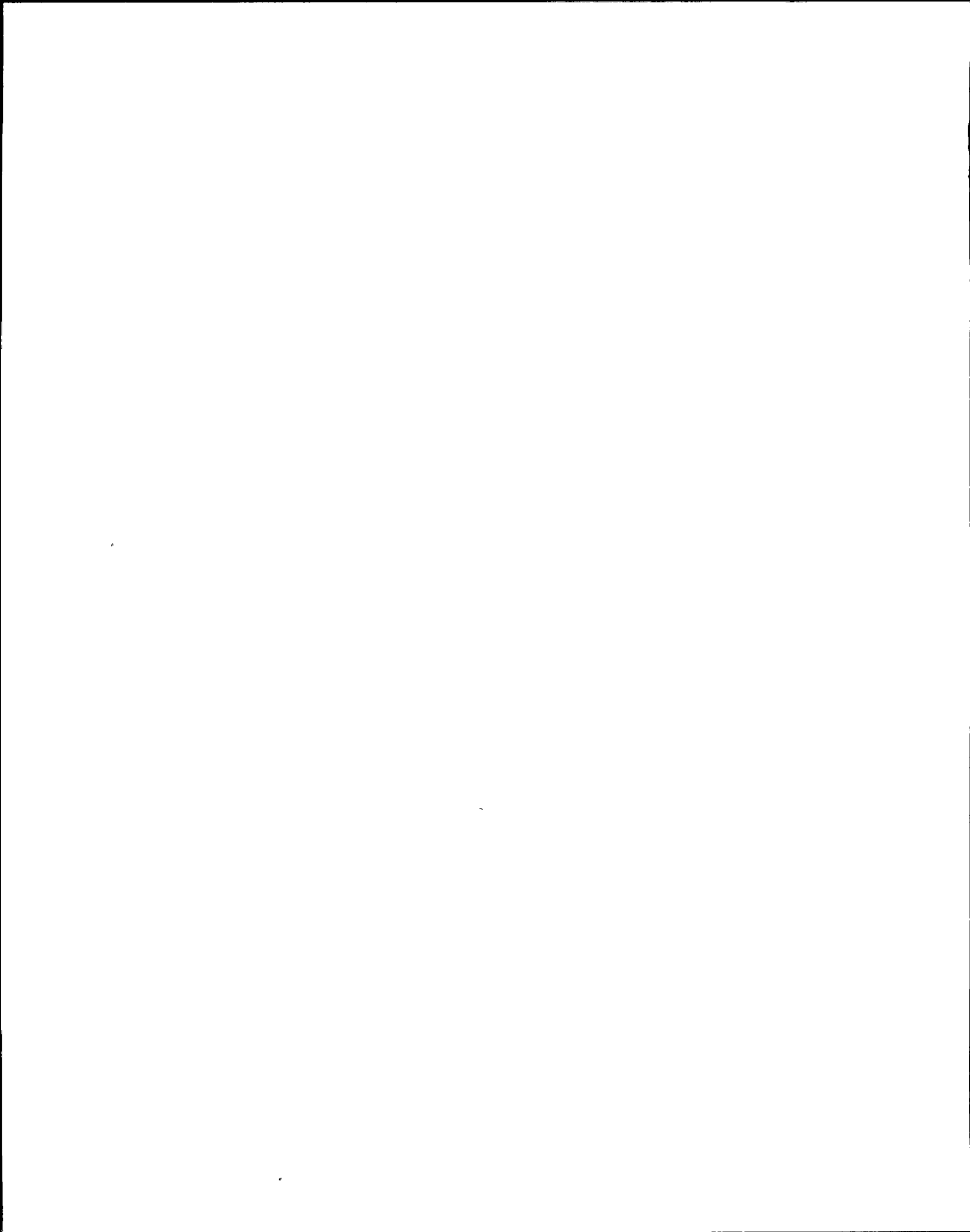
1. CCPUC01(2)(3), RBCLCW PMP P1A(B)(C) MOTOR | ≠ 4

2. CCPUC05(6)(7), RBCLCW BSTR P3A(B)(C) MOT

3. CCPPC04(5)(6), RBCLCW PMP 1A(B)(C) SUCT PRESS

4. CCPPC14(15)(16), RBCLCW BSTR P3A(B)(C) SUCT PRESS

b. For the following, notify Chemistry to sample RBCLC to determine source of poor quality water:

1. CCPCA01, RBCLCW PMP SUCTION CNDT

2. CCPAA01, RBCLCW PUMPS SUCTION PH

c. For CCPFC03, RBCLCW FLO BEL 2 PMP LIM, stop RBCLC Pumps 1A(B)(C), as required to one pump operating, at P601. | ≠4

d. For CCPFC04, RBCLCW FLO BEL 1 PMP LIM, stop RBCLC Pumps 1A(B)(C), as required to one pump operating. Lineup RBCLC loads to achieve greater than 2000 gpm system flow. | ≠4

e. For the following, place an additional CCP Heat Exchanger in service (per steps F.6.2) or remove heat loads from service (per steps H.3.0 or Attachment I).

1. CCPTC04, RBCLCW HX DISCH TEMP | ≠ 4

f. For the following, isolate 2CCP-AOV120 and control level manually 58-70 inches, as indicated locally on 2CCP-LI121. Notify I & C.

1. CCPLC01, RBCLCW EXPANSION TK1 LVL

2. CCPLC02, RBCLCW EXPANSION TK1 LVL

3. CCPZC01, EXP TK1 LVL AOV 2CCP-120 OPEN | ≠4

g. For CCPZC02, RBCLCW HX BYP TV108, remove a CCP Heat Exchanger from service (per Step F.6.3), or throttle service to on-line heat exchanger(s) as directed by SSS.
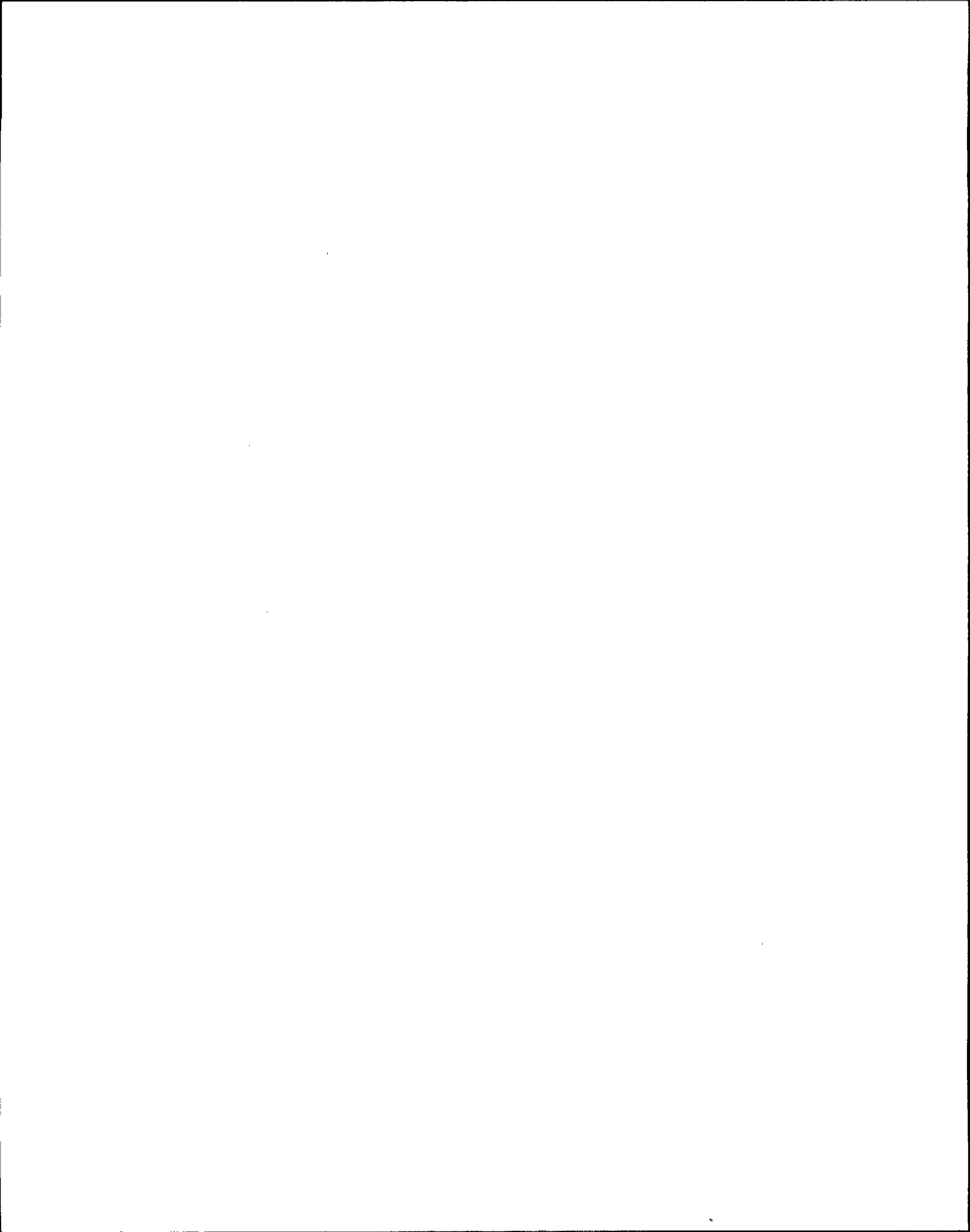
8.0   601251   RBCLC Pump 1A/1B/1C Auto Start

Reflash: No

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┌─────────────────────────┐
│                         │
│                         │
│   RBCLC                 │
│   PUMP 1A/1B/1C         │
│   AUTO START            │
│                         │
│                         │
│              601251     │
└─────────────────────────┘
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601251
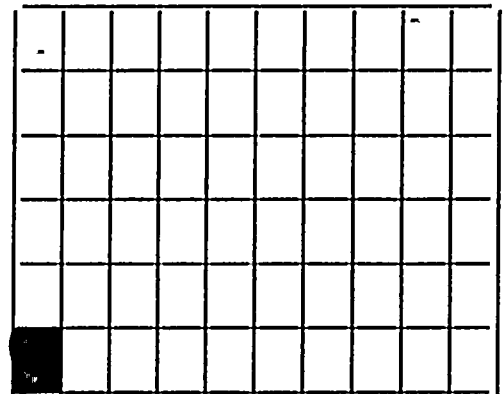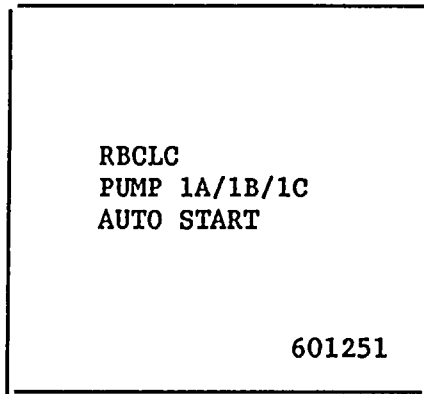
8.1   Computer Point   Computer Printout   Source

a. CCPBC04   RBCLC PMP 1A, 1B,   RBCLC Pump P1A, B, or C
                1C START   control switch in normal
                                       after "STOP" and pump
                                       breaker shut

8.2   Automatic Response

Pump(s) auto start at 25 psig discharge header pressure. |TCN-28

8.3   Corrective Action

a.   Verify RBCLC Pumps Disch Header Press greater than 30 psig,
     at P601.

b.   Clear annunciator by taking running RBCLC Pump P1A(B)(C)
     control switch momentarily to "START", at P601.
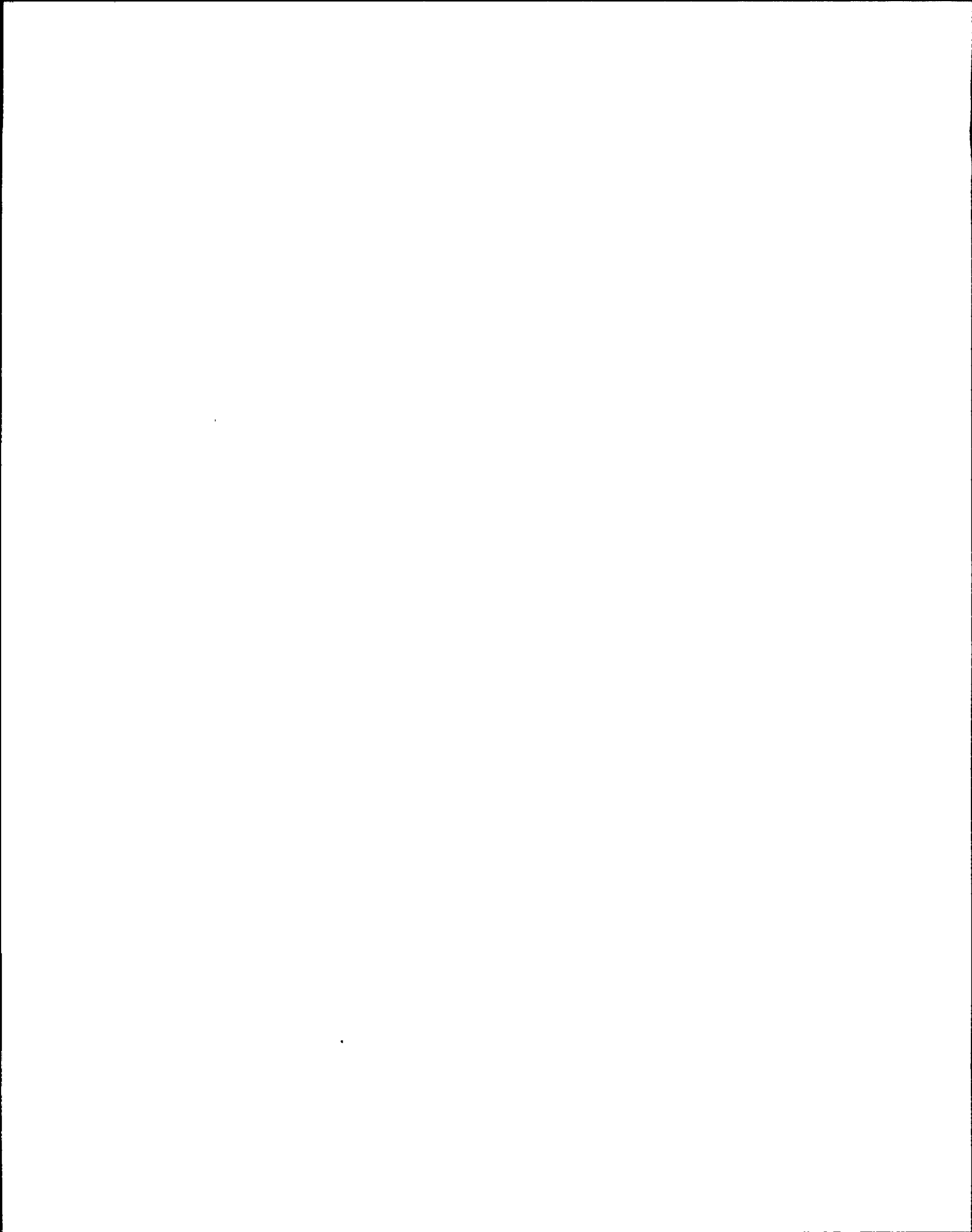
I. PROCEDURE FOR CORRECTING ALARM CONDITIONS (Cont.)

9.0   601252   RBCLC Pump 1A/1B/1C Auto Trip/Fail to Start

Reflash: No

```
┌─────────────────────────┐
│                         │
│                         │
│   RBCLC                 │
│   PUMP 1A/1B/1C         │
│   AUTO TRIP/            │
│   FAIL TO START         │
│                         │
│                 601252  │
└─────────────────────────┘
```
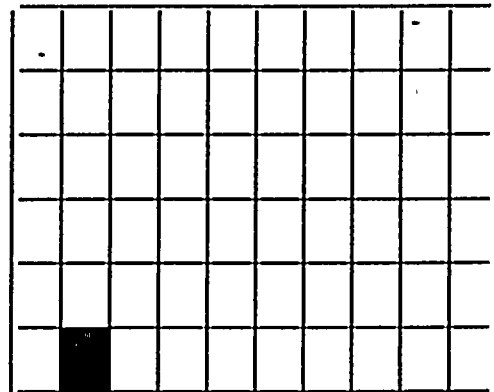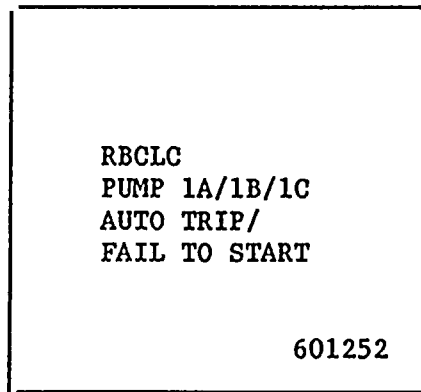
601252

9.1   Computer Point   Computer Printout   Source

        a. CCPUC04   RBCLCW P1A,B,C   RBCLC Pump P1A, B or C
                            AT/FTS   start signal received
                                                   and pump breaker not
                                                   shut, or, suction
                                                   pressure less than
                                                   0 psig.

9.2   Automatic Response

        a. Standby RBCLC Pump will auto start if previously running
            pump tripped on motor electrical fault.

        b. Standby RBCLC Pump will auto start if associated low
            discharge pressure exists less than 0 psig for 10 seconds.

9.3   Corrective Action

        a. Verify RBCLC Pumps Disch Header Press greater than 28 psig, |TCN-28
            at P601.

        b. Start additional RBCLC Pumps P1A(B)(C) as required, at P601.

        c. For a total loss of RBCLC, refer to section H of this
            procedure.

        d. Clear annunciator by taking the associated RBCLC Pump
            P1A(B)(C) control switch to "STOP", at P601.
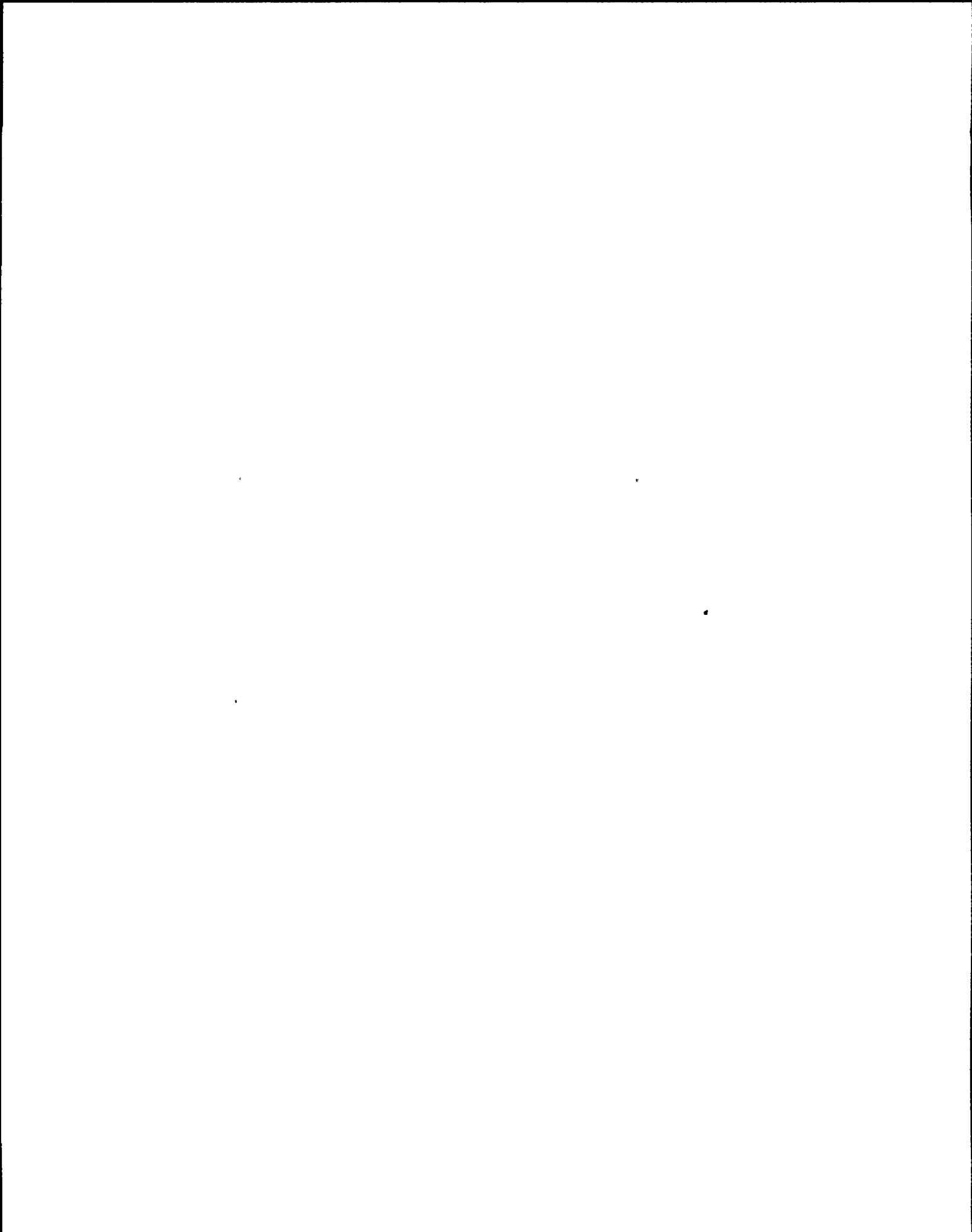
I. <u>PROCEDURE FOR CORRECTING ALARM CONDITIONS</u> (Cont.)

10.0   <u>601253</u>   RBCLC Pump 1A/1B/1C Motor Overload

<u>Reflash: Yes</u>

```
RBCLC
PUMP 1A/1B/1C
MOTOR
OVERLOAD


              601253
```

601253
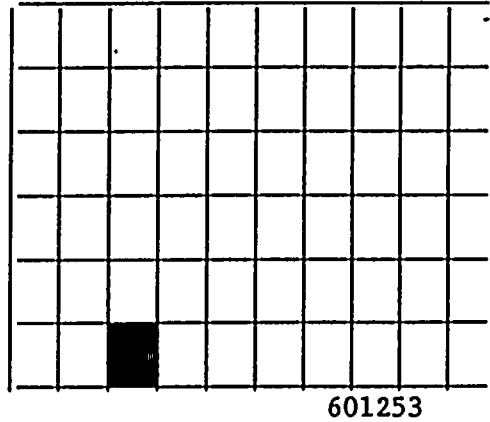
10.1   <u>Computer Point</u>   <u>Computer Printout</u>   <u>Source</u>

a. CCPTC01   RBCLCW PUMP P1A   RBCLC Pump P1A
                   MOTOR   motor overload. As
                                            sensed by 51X-2CCPA01.

b. CCPTC02   RBCLCW PUMP P1B   RBCLC Pump P1B motor
                   MOTOR   overload. As sensed
                                            by 51X-2CCPB01.

c. CCPTC03   RBCLCW PUMP P1C   RBCLC Pump P1C motor
                   MOTOR   overload. As sensed
                                            by 51X-2CCPC01.

10.2   <u>Automatic Response</u>

a.   Affected RBCLC Pump P1A, P1B or P1C trips.

b.   Standby RBCLC Pump P1A, P1B or P1C auto starts.

10.3   <u>Corrective Action</u>

a.   Verify automatic response, at P601.

b.   Verify running RBCLC P1A(B)(C) Current less than 20 amps,
      at P601.

c.   Place affected RBCLC Pump P1A(B)(C) control switch in
      pull-to-lock.

d.   Prior to restarting the affected RBCLC Pump P1A(B)(C),
      reset 86 Lockout relay locally at pump breaker per Table II.
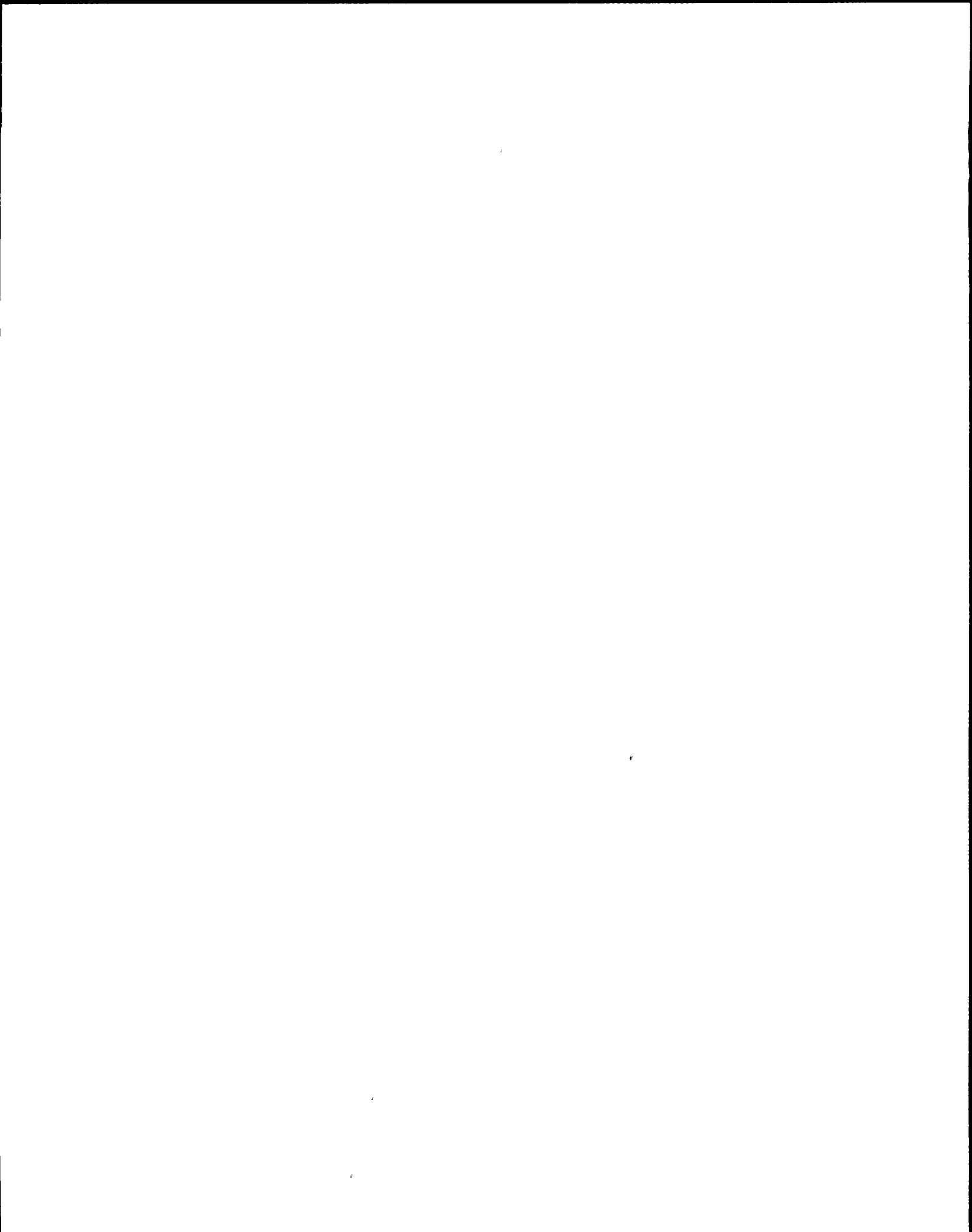
I. PROCEDURE FOR CORRECTING ALARM CONDITIONS (Cont.)

11.0   601254   RBCLC Pump 1A/1B/1C Discharge Pressure Low

Reflash: Yes

```
┌────────────────────────┐
│                        │
│   RBCLC                │
│   PUMP 1A/1B/1C        │
│   DISCH PRESS          │
│   LOW                  │
│                        │
│                        │
│               601254   │
└────────────────────────┘
```

601254
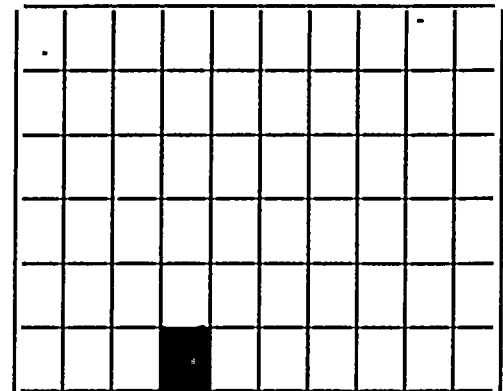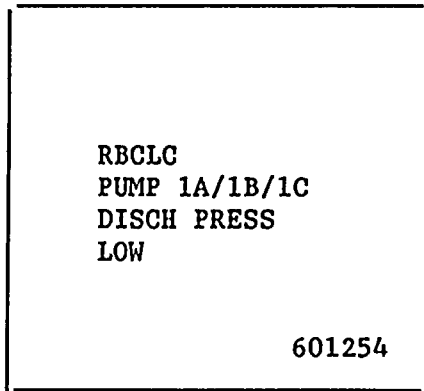
11.1   Computer Point   Computer Printout   Source

        a. CCPPC01   RBCLCW P1A,B,C   RBCLC Pump discharge
                                DIS PR   header pressure less
                                                       than 25 psig. As sensed |TCN-28
                                                       by 2CCP-PS96A.

        b. CCPPC02   RBCLCW P1A,B,C   RBCLC Pump discharge
                                DIS PR   header pressure less
                                                       than 25 psig. As sensed |TCN-28
                                                       by 2CCP-PS96B.

        c. CCPPC03   RBCLCW P1A,B,C   RBCLC Pump discharge
                                DIS PR   header pressure less
                                                       than 25 psig. As sensed |TCN-28
                                                       by 2CCP-PS96C

11.2   Automatic Response

        a.   The associated RBCLC Pump P1A(B)(C) auto starts.

11.3   Corrective Action

        a.   Verify automatic response, at P601.

        b.   Verify RBCLC Pump Discharge Header Pressure greater than 42
              psig, at P601.
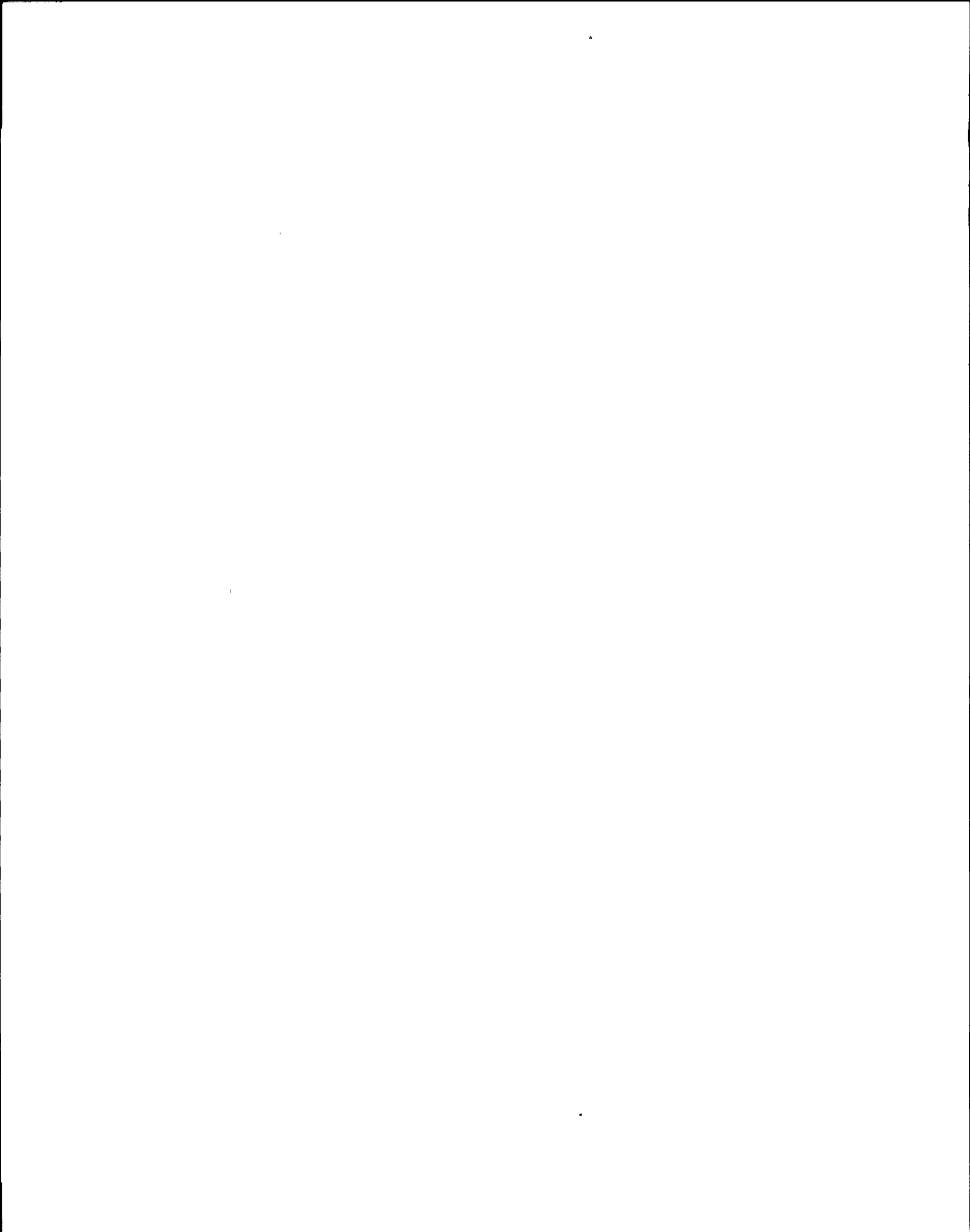
I. PROCEDURE FOR CORRECTING ALARM CONDITIONS (Cont.)

12.0   <u>601255</u>   RBCLCW to RHR Pump 1A/1B/1C Pressure Low

<u>Reflash: Yes</u>

```
RBCLC
TO RHR
PUMP 1A/1B/1C
PRESS LOW


            601255
```

601255
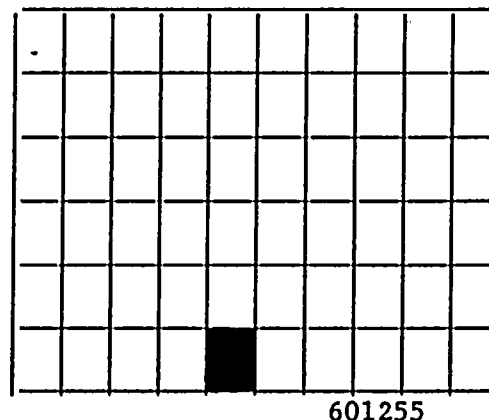
12.1

<u>Computer Point</u>	<u>Computer Printout</u>	<u>Source</u>	
a. CCPPC09	RBCLCW TO 2RHS*P1A PR	RHR Pump 1A seal cooler RBCLC supply pressure less than 85 psig. As sensed by 2CCP*PS76A.	☆4
b. CCPPC10	RBCLCW TO 2RHS*P1B/C PR	RHR Pump 1B and 1C seal coolers RBCLC supply pressure less than 85 psig. As sensed by 2CCP*PS76B.	☆4

12.2   <u>Automatic Response</u>

None

12.3   <u>.Corrective Action</u>

    a.   Verify one of the following sources of cooling lined up to the associated RHR Pump(s) seal cooler, at P601:

        1.   RBCLC, with 2CCP*AOV37A(B) and 2CCP*AOV38A(B) open

        2.   Service Water, with 2SWP*AOV20A(B) and 2SWP*AOV22A(B) open.

    b.   For a loss of RBCLC, shift RHR Pump seal cooling, for the operating pumps, to Service Water, per Section H of this procedure.
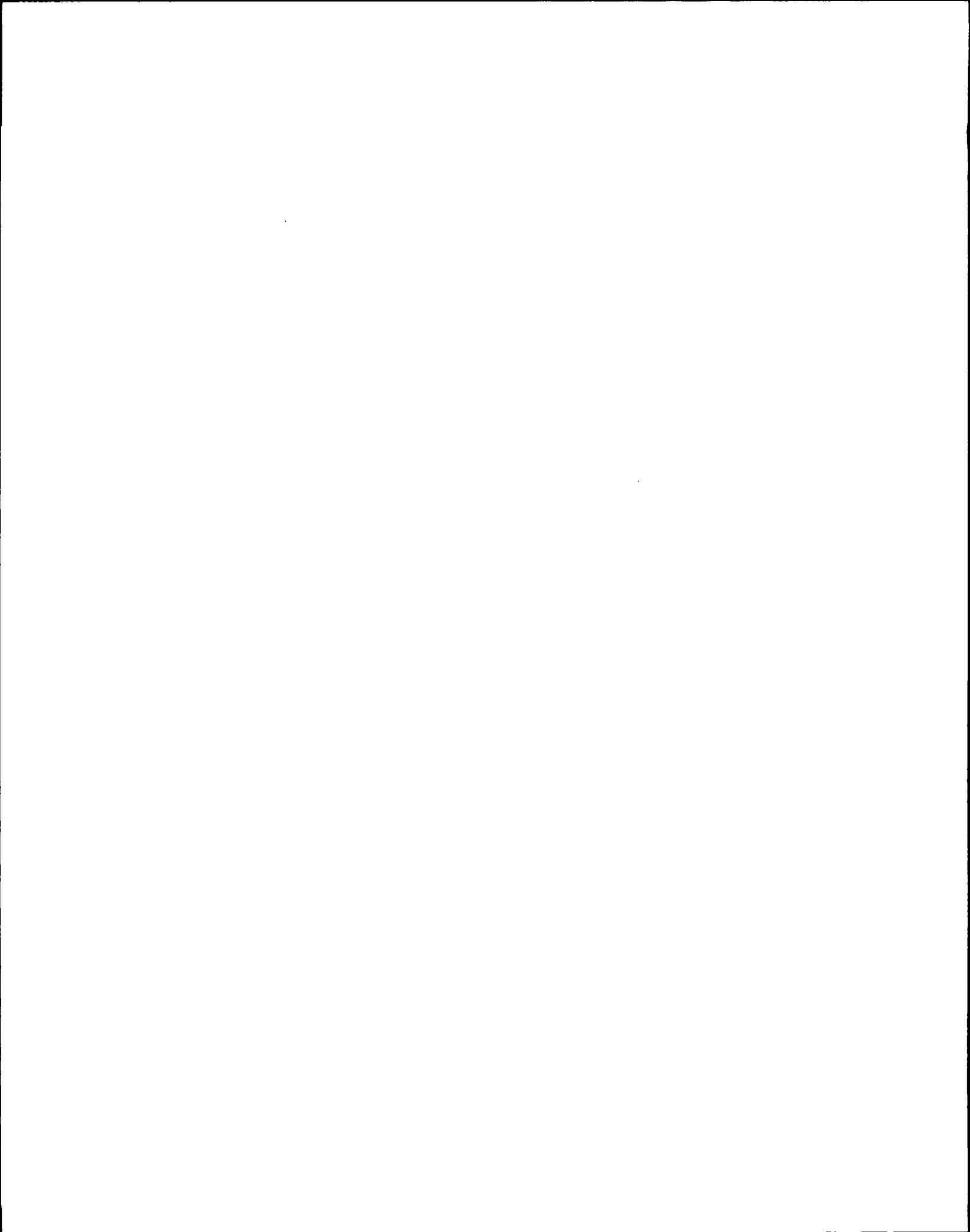
13.0   601256   RBCLCW to Reactor Water Cleanup Flow High

Reflash: No

```
+--------------------------+     +-----------------------------+
|                          |     |  .                    .     |
|                          |     |-----------------------------|
|                          |     |                             |
|   RBCLCW                 |     |-----------------------------|
|   TO RWCU                |     |                             |
|   FLOW                   |     |-----------------------------|
|   HIGH                   |     |                             |
|                          |     |-----------------------------|
|                          |     |                             |
|                          |     |-----------------------------|
|              601256      |     |              ███            |
+--------------------------+     +-----------------------------+
                                              601256
```

13.1   Computer Point   Computer Printout   Source

    a. CCPFC01   RBCLCW TO RWCU FLO   RBCLC flow through | * 4
                                                RWCU None Regenerative
                                                Heat Exchanger greater
                                                than 1450 gpm. As
                                                sensed by 2CCP-FE126.

13.2   Automatic Response

NONE

13.3   Corrective Action

    a.   Verify WCS Non-Regen Hx Bypass, 2CCP-FV126, modulating.

    b.   Notify I&C.
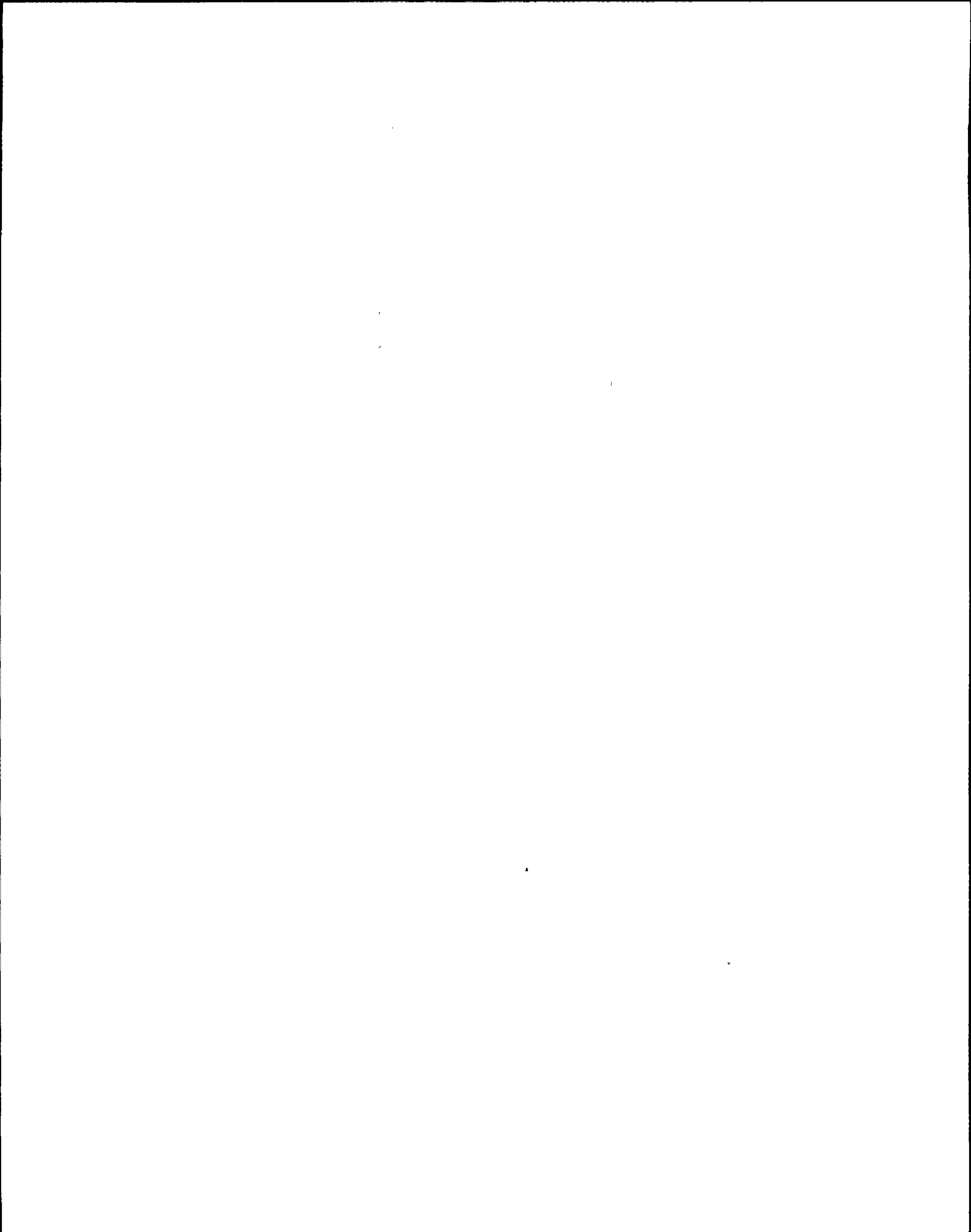
I. PROCEDURE FOR CORRECTING ALARM CONDITIONS (Cont.)

14.0   601257   RBCLCW to Reactor Recirc Pump A Coolers Pressure Low

        Reflash: No

```
+--------------------+
|                    |
|                    |
|                    |
|  RBCLCW            |
|  TO REACTOR        |
|  RECIRC PUMP A     |
|  CLRS PRES LOW     |
|                    |
|             601257 |
|                    |
+--------------------+
```
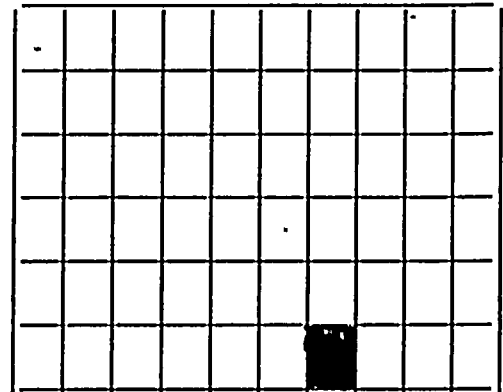
601257

14.1   Computer Point   Computer Printout   Source

     a. CCPPC07   RBCLCW TO RCS P1A   Reactor Recirc Pump 1A   *4
                                 CLR PR   RBCLC supply pressure
                                                         less than 60 psig. As
                                                         sensed by 2CCP*PT90A.

14.2   Automatic Response

     None

14.3   Corrective Action
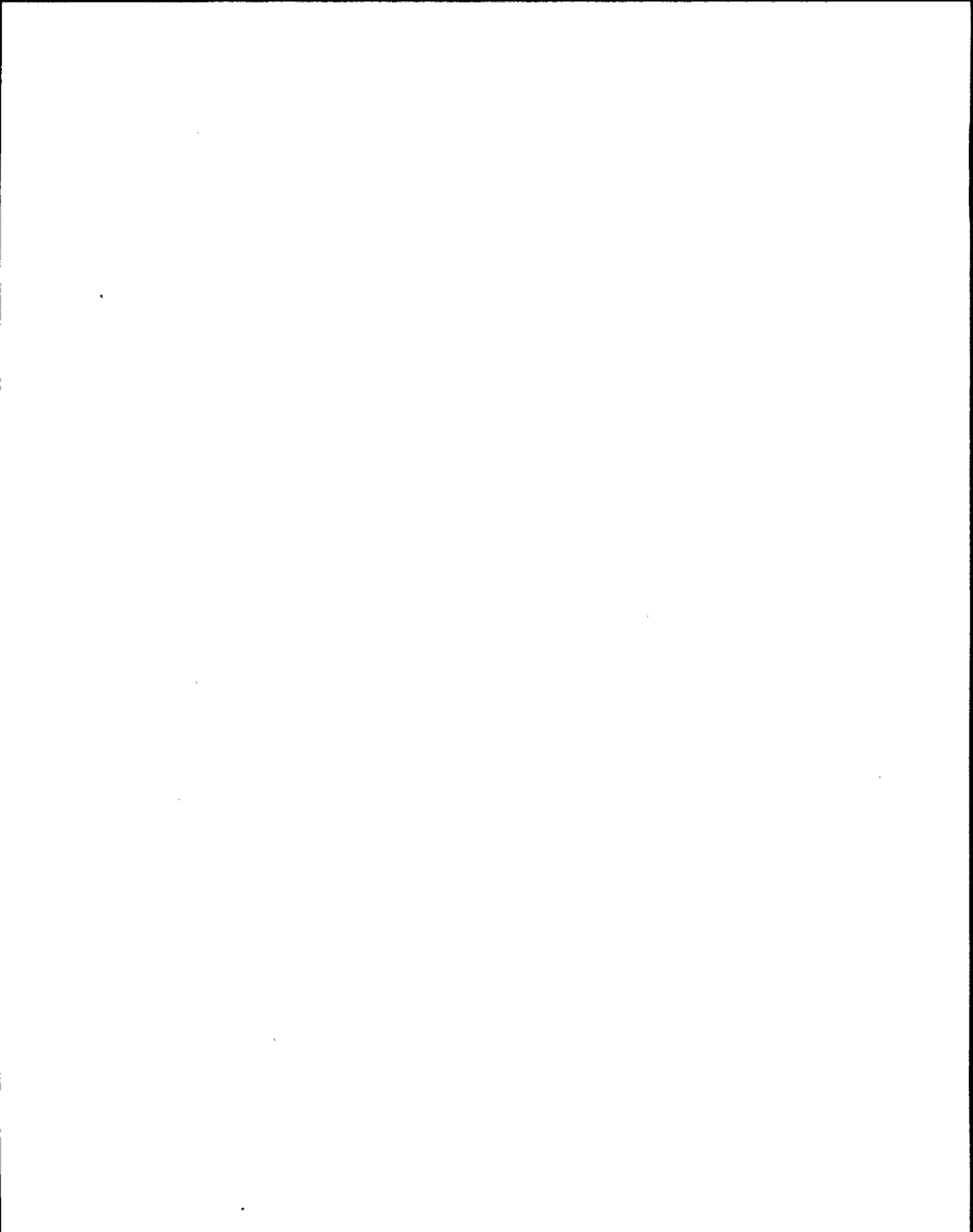
     a.   Refer to N2-OP-29 Section H, Loss of RBCLC To Recirc Pump.

15.0   <u>601258</u>   RBCLCW to Reactor Recirc Pump B Coolers Pressure Low

<u>Reflash: No</u>

```
RBCLCW
TO REACTOR
RECIRC PUMP B
CLRS PRES LOW


           601258
```
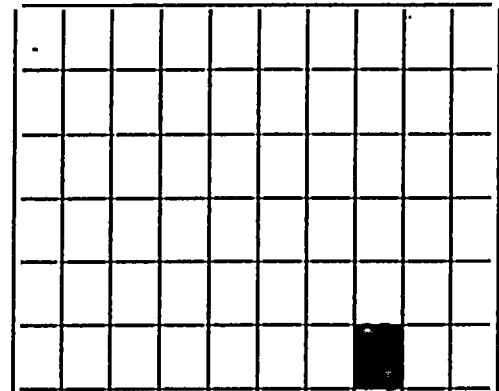
601258

15.1   <u>Computer Point</u>   <u>Computer Printout</u>   <u>Source</u>

a. CCPPC08   RBCLCW TO RCS P1B   Reactor Recirc Pump 1B   * 4
              CLR PR   RBCLC supply pressure
                                    less than 60 psig. As
                                    sensed by 2CCP*PT90B.

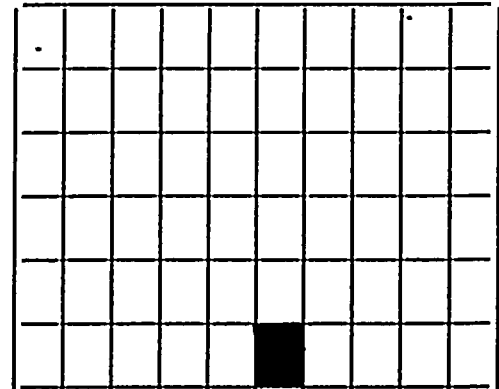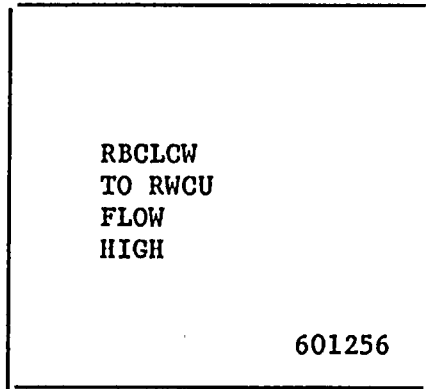15.2   <u>Automatic Response</u>

None

15.3   <u>Corrective Action</u>

a.   Refer to N2-OP-29 Section H, Loss of RBCLC To Recirc Pumps.
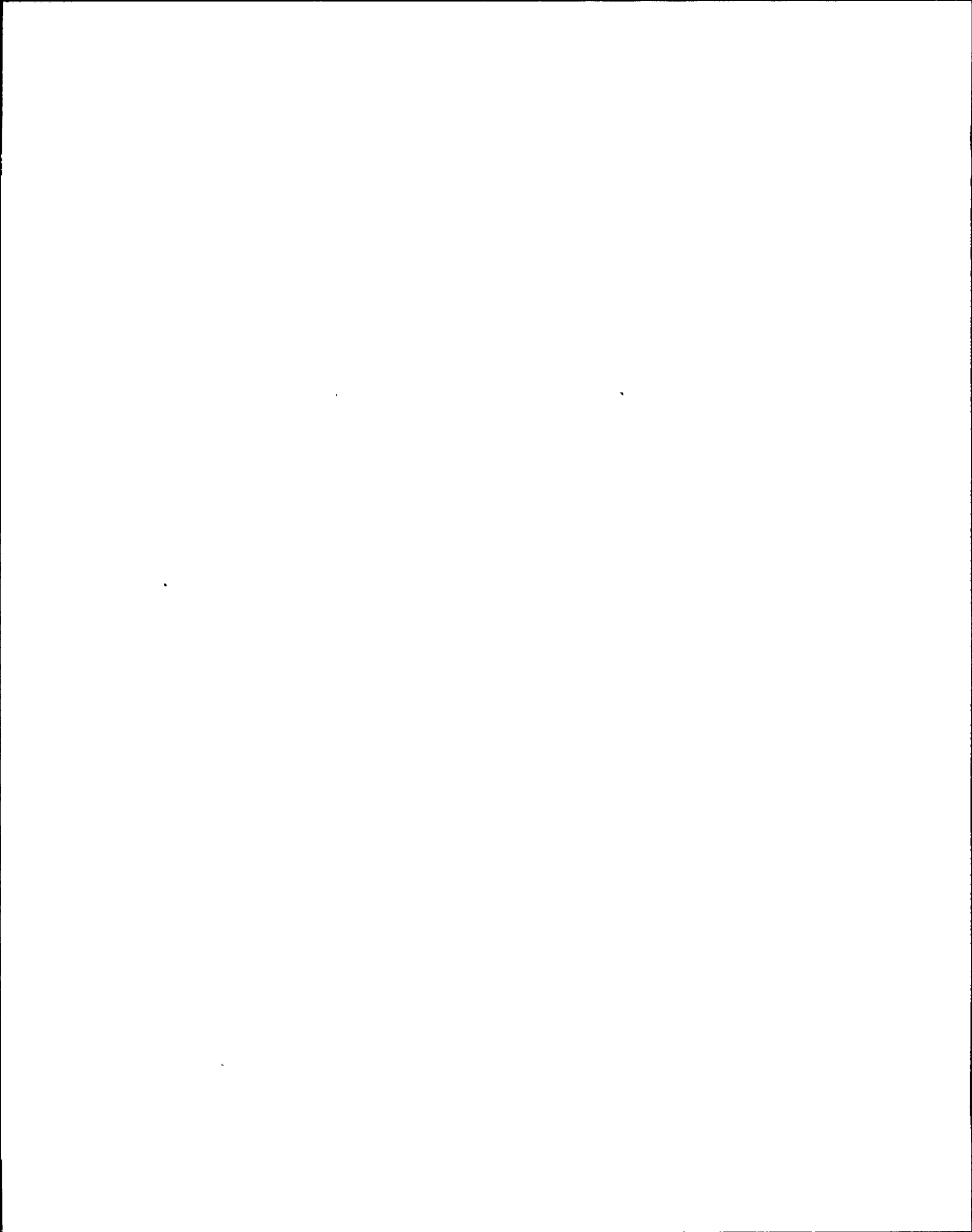
I. PROCEDURE FOR CORRECTING ALARM CONDITIONS (Cont.)

16.0   601259   RBCLC From Drywell Unit Coolers Temperature High

Reflash: Yes

```
┌─────────────────────────┐
│                         │
│   RBCLC                 │
│   FROM DRYWELL          │
│   UNIT COOLERS          │
│   TEMP HIGH             │
│                         │
│              601259     │
└─────────────────────────┘
```
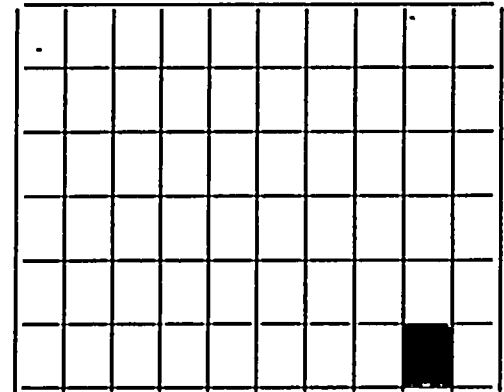
601259

16.1

Computer Point	Computer Printout	Source	
a. CCPTC05	RBCLCW FR DW UC1A TEMP	RBCLC from Drywell Unit Cooler, 2DRS-UC1A, greater than 120°F. As sensed by 2CCP-TE30A.	✿ 4
b. CCPTC06	RBCLCW FR DW UC1B TEMP	RBCLC from Drywell Unit Cooler, 2DRS-UC1B, greater than 120°F. As sensed by 2CCP-TE30B.	✿4
c. CCPTC07	RBCLCW FR DW UC1C TEMP	RBCLC from Drywell Unit Cooler, 2DRS-UC1C, greater than 120°F. As sensed by 2CCP-TE30C.	✿4
d. CCPTC08	RBCLCW FR DW UC1D TEMP	RBCLC from Drywell Unit Cooler, 2DRS-UC1D, greater than 120°F. As sensed by 2CCP-TE30D.	✿ 4
e. CCPTC09	RBCLCW FR DW UC2A TEMP	RBCLC from Drywell Unit Cooler, 2DRS-UC2A, greater than 120°F. As sensed by 2CCP-TE24A.	✿4
f. CCPTC10	RBCLCW FR DW UC2B TEMP	RBCLC from Drywell Unit Cooler, 2DRS-UC2B, greater than 120°F. As sensed by 2CCP-TE24B.	✿4
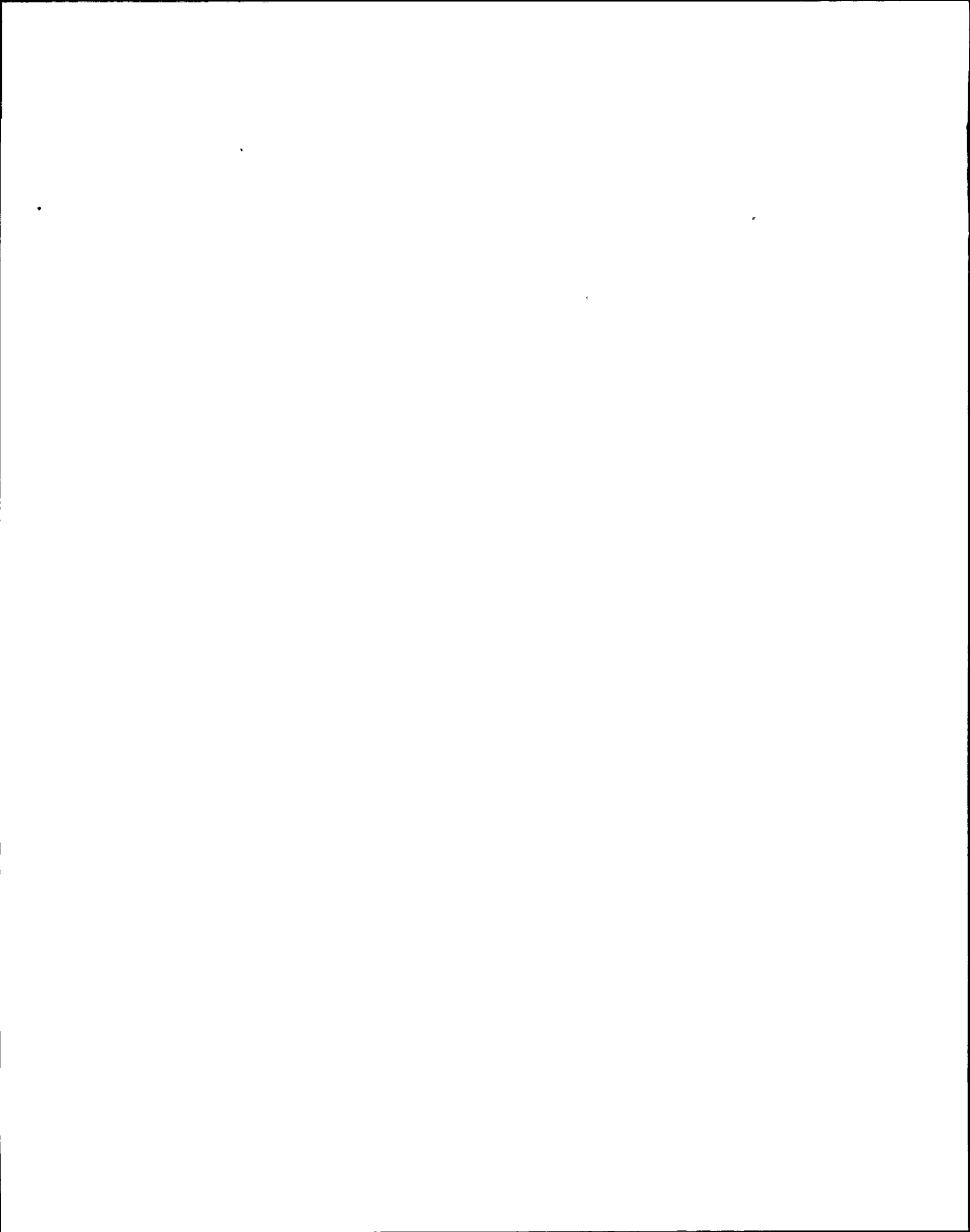
g. CCPTC11	RBCLCW FR DW UC2C TEMP	RBCLC from Drywell Unit Cooler, 2DRS-UC2C, greater than 120°F. As sensed by 2CCP-TE24C.	*4
h. CCPTC12	RBCLCW FR DW UC2D TEMP	RBCLC from Drywell Unit Cooler, 2DRS-UC2D, greater than 120°F. As sensed by 2CCP-TE24D.	*4
i. CCPTC13	RBCLCW FR DW UC3A TEMP	RBCLC from Drywell Unit Cooler, 2DRS-UC3A, greater than 120°F. As sensed by 2CCP-TE74A.	*4
j. CCPTC14	RBCLCW FR DW UC3B TEMP	RBCLC from Drywell Unit Cooler, 2DRS-UC3B, greater than 120°F. As sensed by 2CCP-TE74B.	*4

16.2 Automatic Response

NONE

16.3 Corrective Action

a. Monitor drywell temperature and pressure.

b. Verify RBCLC valve lineup to affected cooler, at P873.

c. Start additional Drywell Cooler, as required, per N2-OP-60.
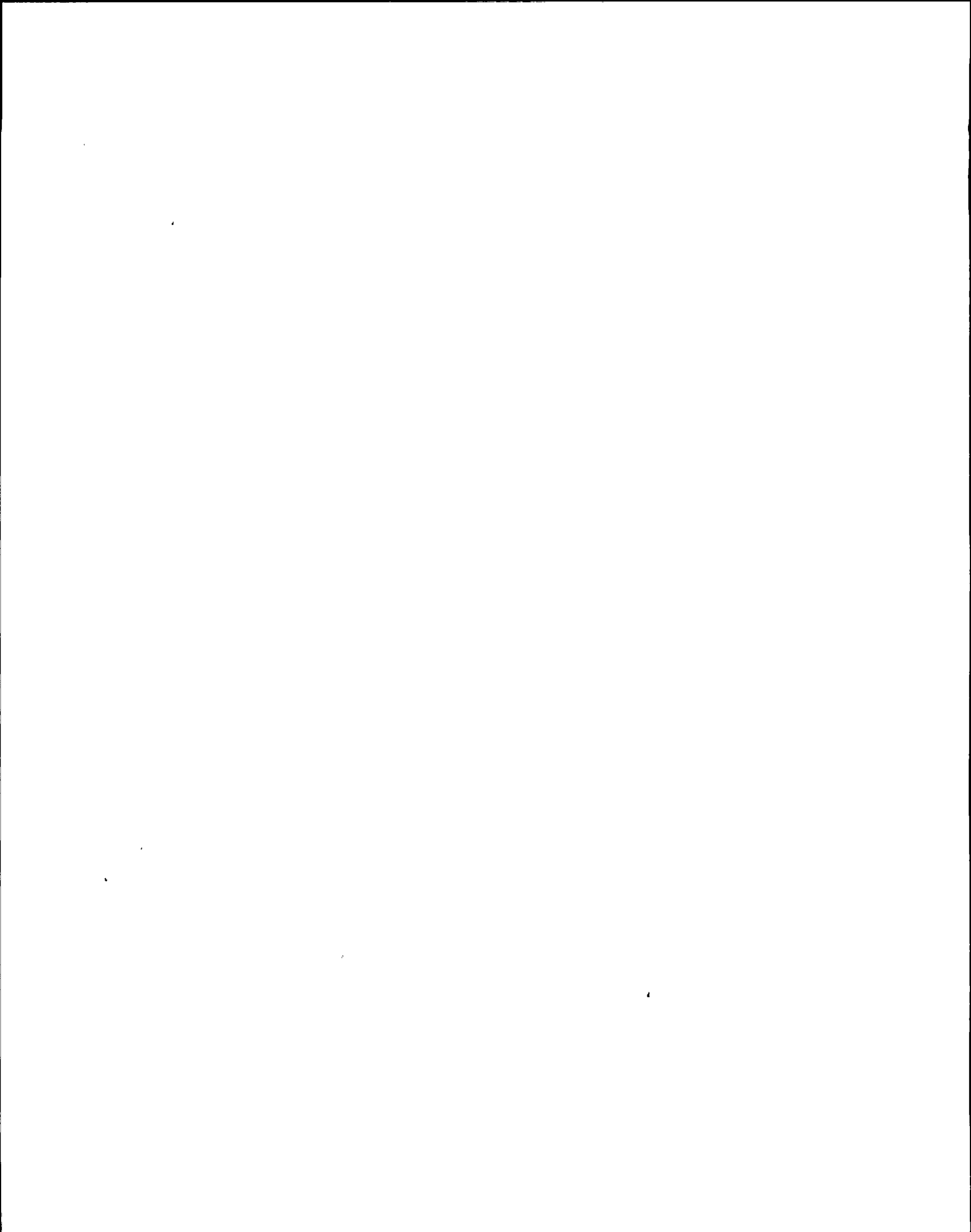
I. PROCEDURE FOR CORRECTING ALARM CONDITIONS

   17.0   851259   Instrument Air Compressor Cooling Water Flow Low

           Reflash: No

   ┌─────────────────────────┐
   │   │
   │   INST AIR   │
   │   COMPRESSOR   │
   │   CLG WTR FLOW   │
   │   LOW   │
   │   │
   │   851259   │
   └─────────────────────────┘

                                                                851259
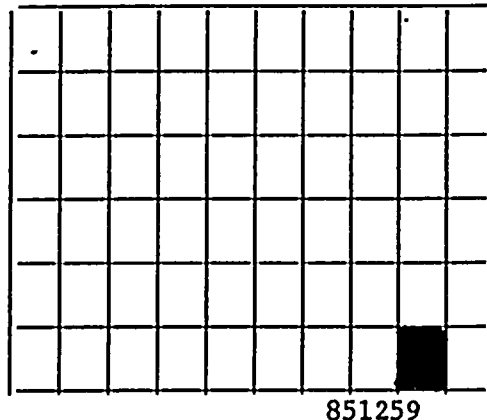
   17.1   Computer Point   Computer Printout   Source

           a. CCPFC05   RBCLCW P2A/B   RBCLC Pump 2A and 2B,   * 4
                               DIS HDR FLO   2CCP-P2A and B, discharge
                                                    header flow less than
                                                    45 gpm. As sensed by
                                                    2CCP-FE128.

   17.2   Automatic Response

           a.   Standby RBCLC Pump P2A(B) starts if the following
                conditions are met:

                1.   RBCLC Pump P2A(B) control switch in normal after
                     "STOP."

                2.   RBCLC Pump P2A(B) suction pressure greater than 4 psig.

   17.3   Corrective Action

           a.   Verify automatic response at P851.

           b.   Verify Instrument Air Compressors RBCLC water valve lineup
                per Table I.
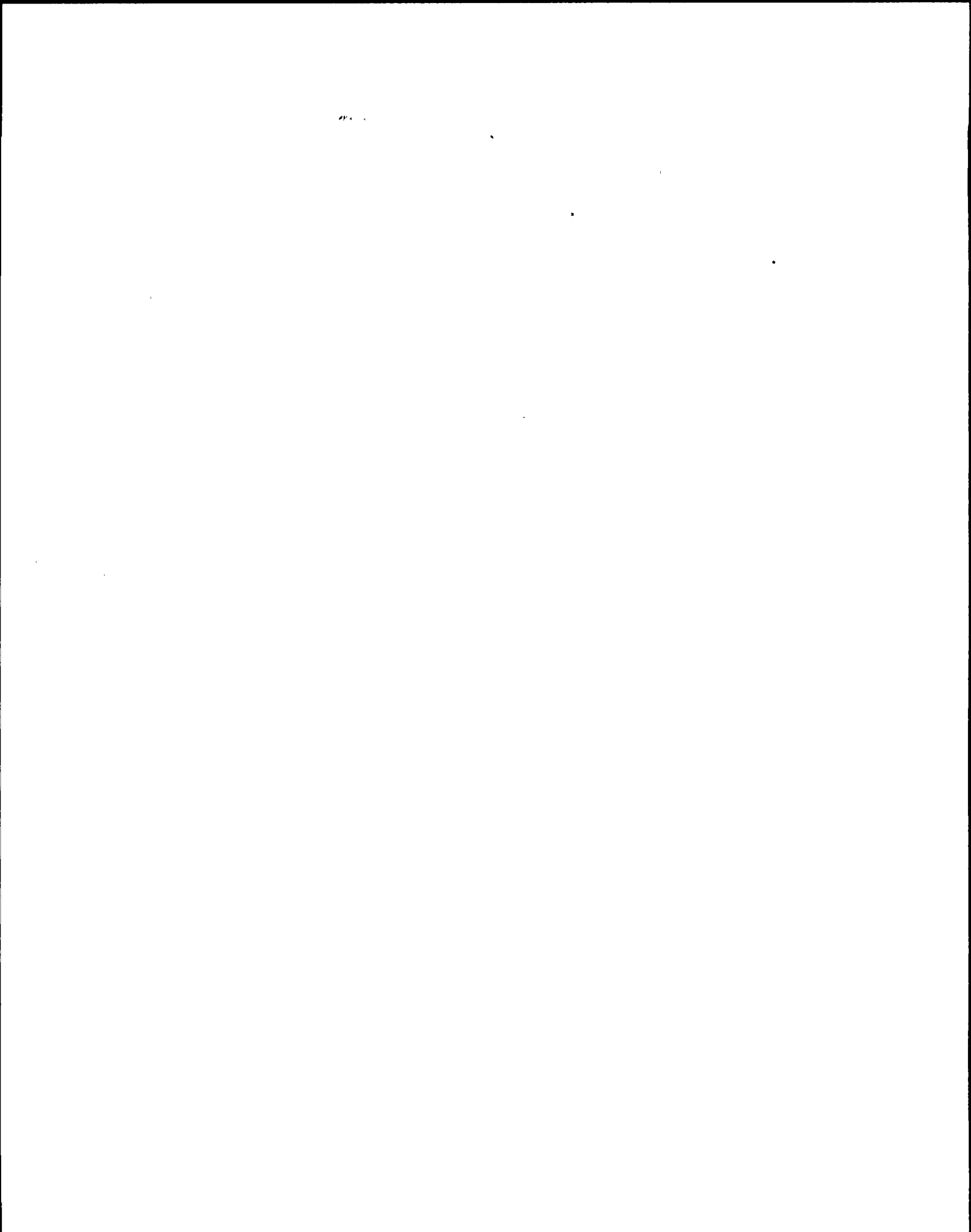
18.0   851260   Instrument Air Compressor Cooling System Trouble

Reflash: Yes

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┌─────────────────────┐
│                     │
│                     │
│   INST AIR          │
│   COMPRESSOR        │
│   COOLING SYS       │
│   TROUBLE           │
│                     │
│              851260 │
└─────────────────────┘
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851260

18.1

Computer Point	Computer Printout	Source
a. CCPPC17	RBCLCW PMP 2A, B SUCT PR	1. RBCLC Pump 2A or 2B 2CCP-P2A or B, suction pressure less than 4 psig. As sensed by 2CCP-PS25A or B.
b. CCPTC56	RBCLCW PMP P2A-B MOTOR	2. RBCLC Pump 2A or 2B, 2CCP-P2A or B, motor overload. As sensed by 49X-2CCPA55 or 49X-2CCPB55.
c. CCPUC09	RBCLCW PMP P2A, B AT/FTS	3. RBCLC Pump 2A or 2B, 2CCP-P2A or B, start signal received and pump breaker not closed.
d. CCPBC09	RBCLCW P2A/B AUTO START	4. RBCLC Pump 2A or 2B, 2CCP-P2A or B, control switch in normal after "STOP" and pump breaker closed.
e. CCPLC03	RBCLCW EXPANSION TK2 LEVEL	5. 2CCP-TK2 low level as sensed by 2CCP-LS181

16080
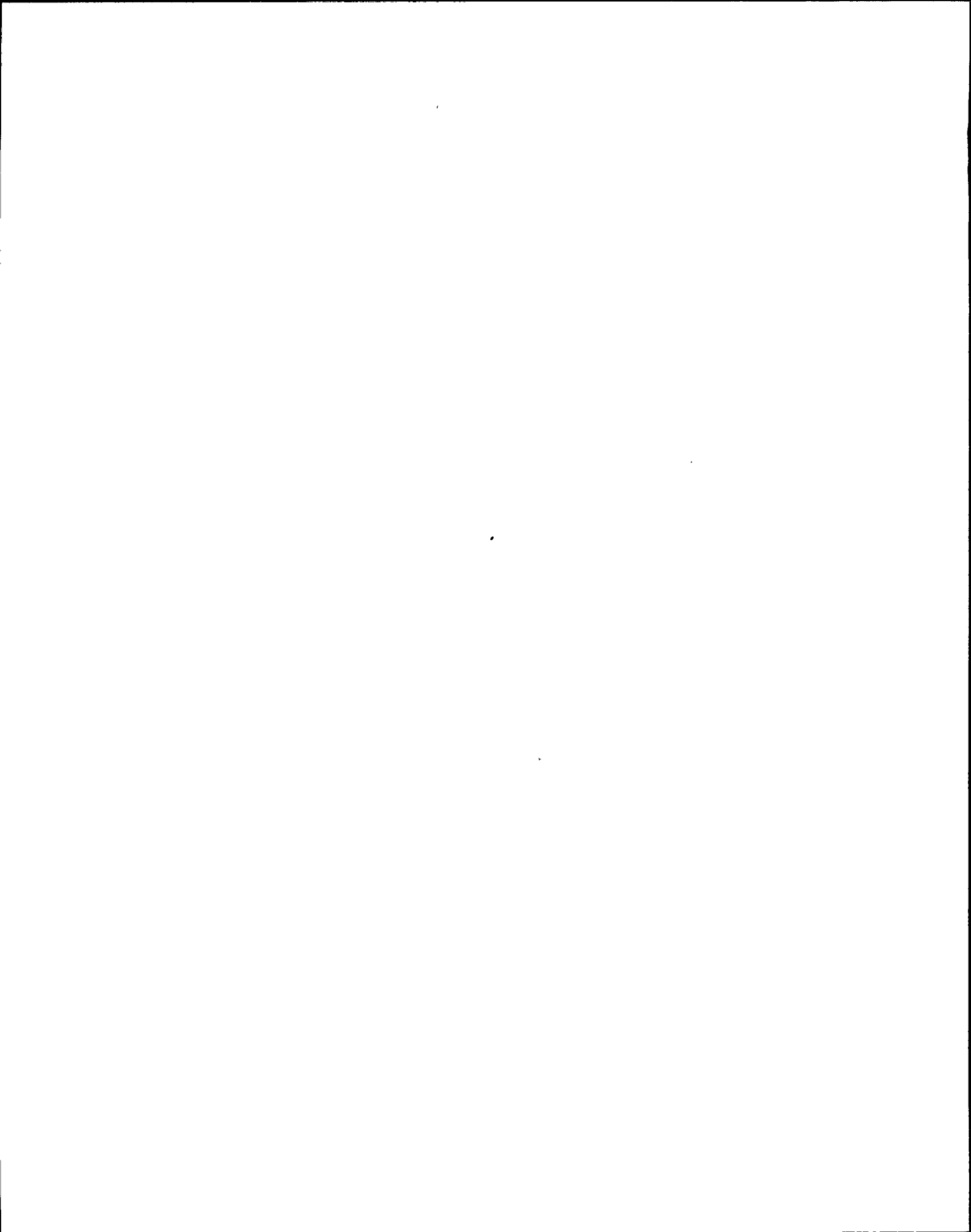
18.2   Automatic Response

a. The affected RBCLC Pump 2A or 2B, trips on the following:.

    1.   CCPPC17, RBCLCW PMP 2A, B SUCT PR.

    2.   CCPTC56, RBCLCW PMP 2A-B MOTOR.

    3.   CCPUC09, RBCLCW PMP 2A/B AT/FTS.

b. For CCPBC09, RBCLCW PMP P2A, B START, the standby RBCLC Pump
    2A or 2B auto starts if the following conditions exist:

    1.   Control switch in normal-after-"STOP."

    2.   Pump suction pressure greater than 4 psig.

18.3   Corrective Action

a. Verify automatic response, at P851.

b. Verify RBCLC Pump 2A or 2B running at P851.

c. If CCPLC03 is in alarm:

    1.   Verify valid alarm locally at CCP-TK2. Level should
          be 6-24" on 2CCP-LI127.

    2.   If CCP-TK2 level is low and the Normal makeup valve,   16080
          2CCP-AOV180 has not opened, maintain level by opening
          the Normal fill AOV bypass valve, 2CCP-V845. Close
          2CCP-V845 when level is restored.
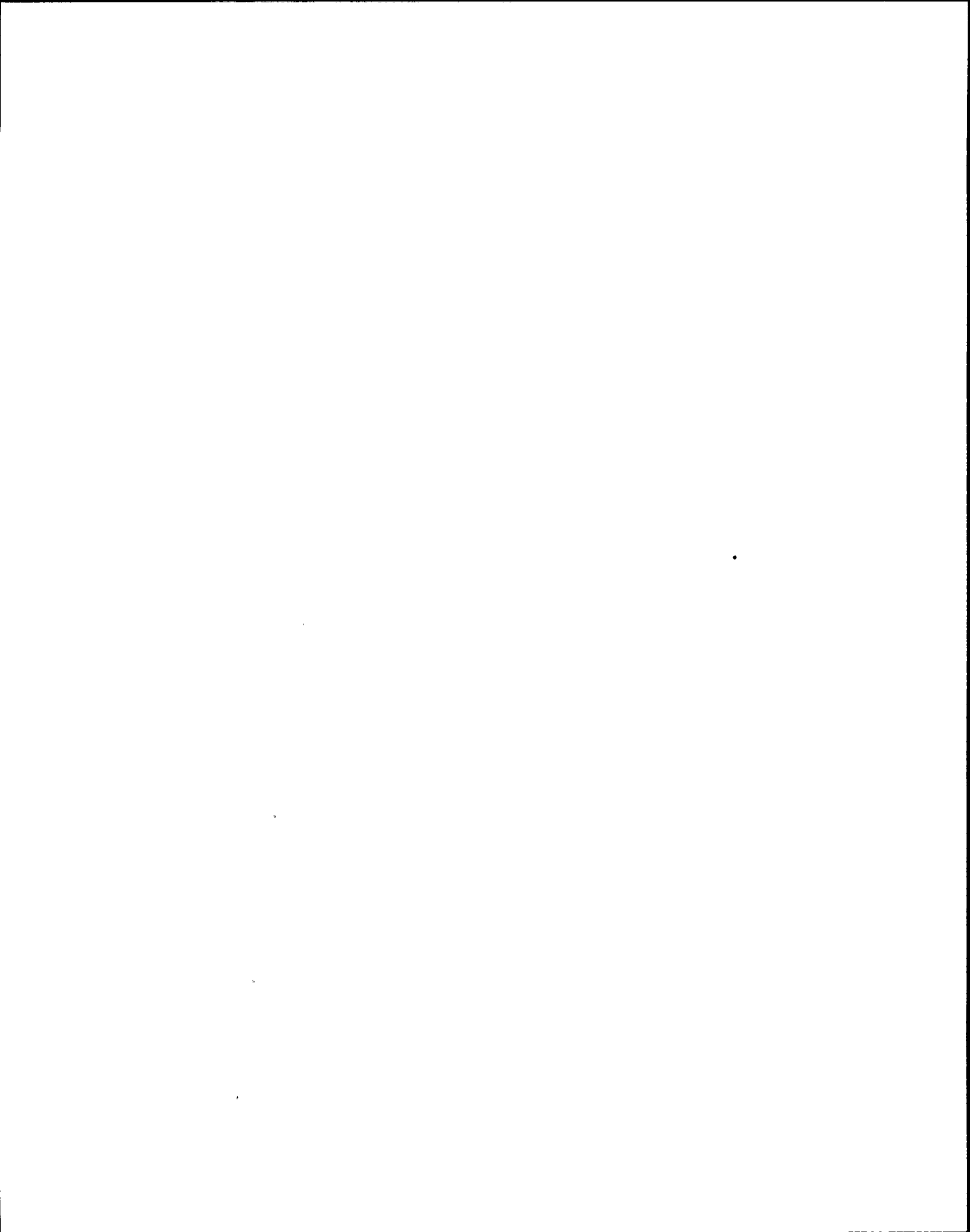
19.0   <u>873211</u>   Drywell Unit Cooler Cooling Water Division I Containment
                         Isolation Valve LOCA Override

            <u>Reflash: No</u>

```
+---------------------------+
|                           |
|   DRYWELL                 |
|   UNIT CLR WTR            |
|   DIV I CNMT IV           |
|   LOCA OVERRIDE           |
|                           |
|                  873211   |
+---------------------------+
```

873211
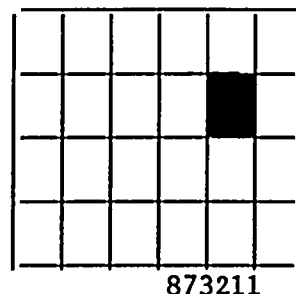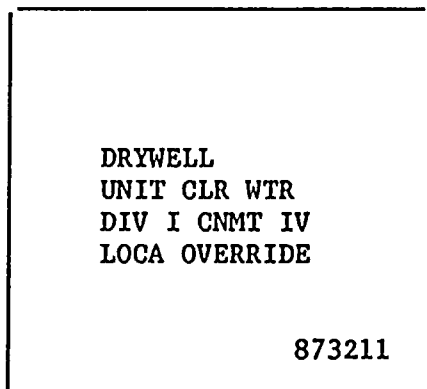
19.1   <u>Computer Point</u>   <u>Computer Printout</u>   <u>Source</u>

        a. CCPBC14   DW D1 UC WTR IV   Division I Drywell
                              LOCA OR   Unit Cooler LOCA
                                                       Override keylock
                                                       switch in the
                                                       "OVERRIDE" position,
                                                       at P873.

19.2   <u>Automatic Response</u>

        NONE

19.3   <u>Corrective Action</u>

        a. Restore Division I Drywell Unit Cooler LOCA Override
            keylock switch to "RESET", as required, at P873.
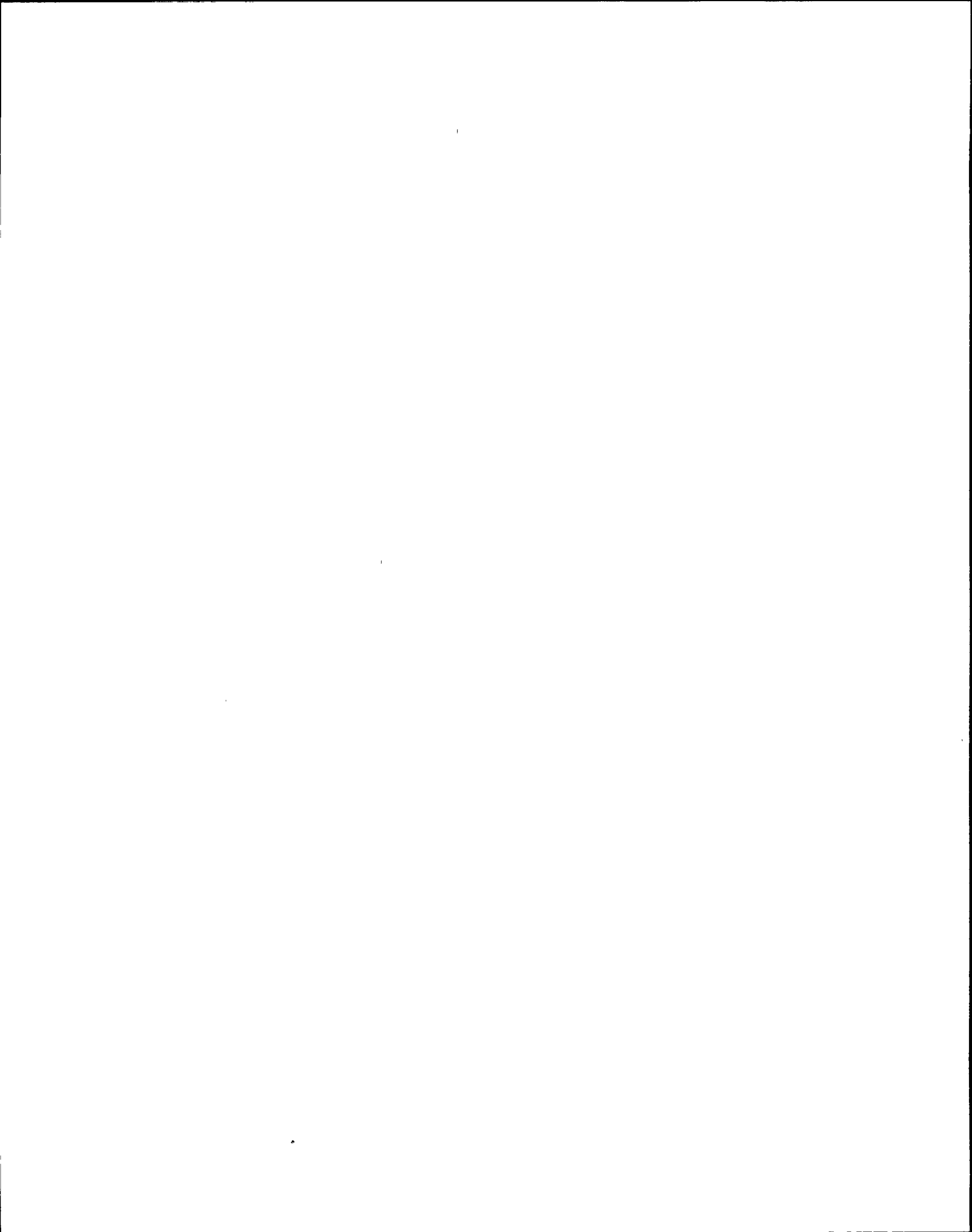
I. PROCEDURE FOR CORRECTING ALARM CONDITIONS (Cont.)

20.0   873212   Drywell Unit Cooler Cooling Water Division II Containment Isolation Valve LOCA Override

Reflash: No

```
┌─────────────────────────┐        ┌──┬──┬──┬──┬──┬──┐
│                         │        ├──┼──┼──┼──┼──┼──┤
│   DRYWELL               │        ├──┼──┼──┼──┼──┼██┤
│   UNIT CLR WTR          │        ├──┼──┼──┼──┼──┼██┤
│   DIV II CNMT IV        │        ├──┼──┼──┼──┼──┼──┤
│   LOCA OVERRIDE         │        └──┴──┴──┴──┴──┴──┘
│                         │             873212
│              873212     │
└─────────────────────────┘
```
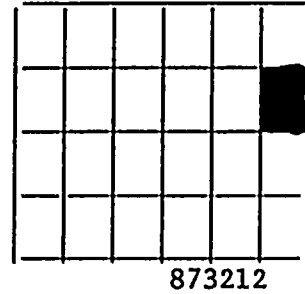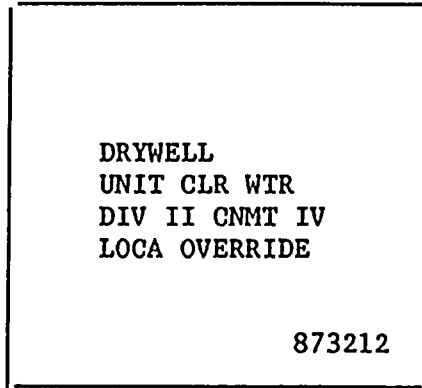
20.1   Computer Point   Computer Printout   Source

a. CCPBC15   DW.D2 UC WTR IV   Division II   *4
                        LOCA OR   Drywell Unit
                                                 Cooler LOCA
                                                 Override keylock
                                                 switch in the
                                                 "OVERRIDE" position,
                                                 at P873.

20.2   Automatic Response

NONE

20.3   Corrective Action

a. Restore Division II Drywell Unit Cooler LOCA Override keylock switch to "RESET", as required, at P873.
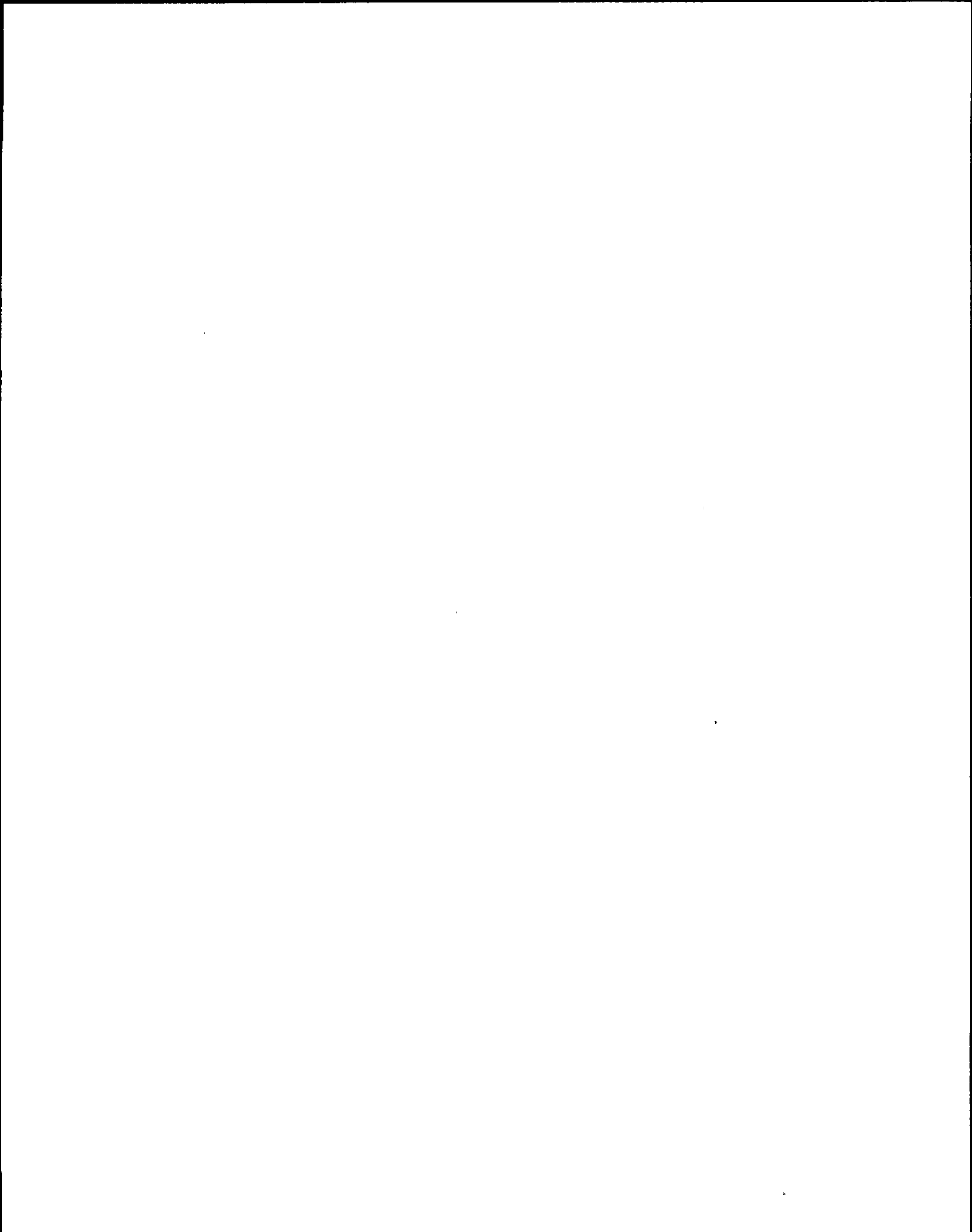
21.0   873424   Division I RBCLCW SFC Heat Exchanger Supply/Return Valves
                     Motor Overload

         Reflash: No

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┌─────────────────────────────┐
│                             │
│                             │
│   DIV I RBCLCW              │
│   SFC HT EXCH              │
│   SPLY/RTN VLVS            │
│   MOT OVERLOAD             │
│                             │
│                   873424   │
│                             │
└─────────────────────────────┘
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873424
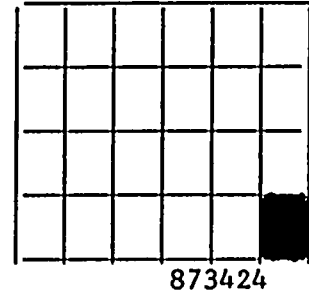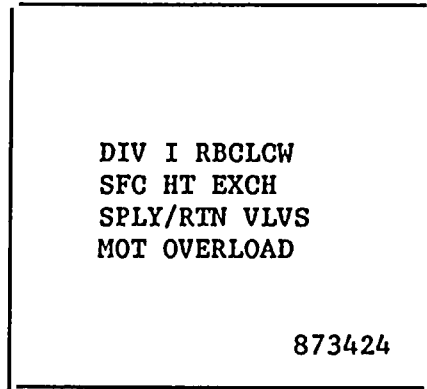
21.1   Computer Point   Computer Printout   Source

         a. CCPTC39   D1 RBCLCW TO SFP HX   Motor overload   * 4
                                 V MOT   on one or both
                                                             of the following:

                                                             1. RBCLC To SFC
                                                                 HX, 2CCP*MOV
                                                                 14A. As sensed
                                                                 by 49X-2CCPA04.

                                                             2. RBCLC FR SFC
                                                                 HX, 2CCP*MOV
                                                                 18A. As sensed
                                                                 by 49X-2CCPA06.

21.2   Automatic Response

         a. The affected valve stops travel.

         b. Valve travel seal-in circuitry is removed, rendering the
             affected valve throttleable from P873.

21.3   Corrective Action

NOTE: Remote operation may result in motor damage.

         a. If operation is required, throttle the affected valve at
             P873.

         b. Manually position valve, as required, per the following:

1. De-energize the affected valve, per table below.

2. Position valve manually.

Valve	MCC	Cubicle
2CCP*MOV14A	2EHS*MCC103A	4A
2CCP*MOV18A	2EHS*MCC103A	4B
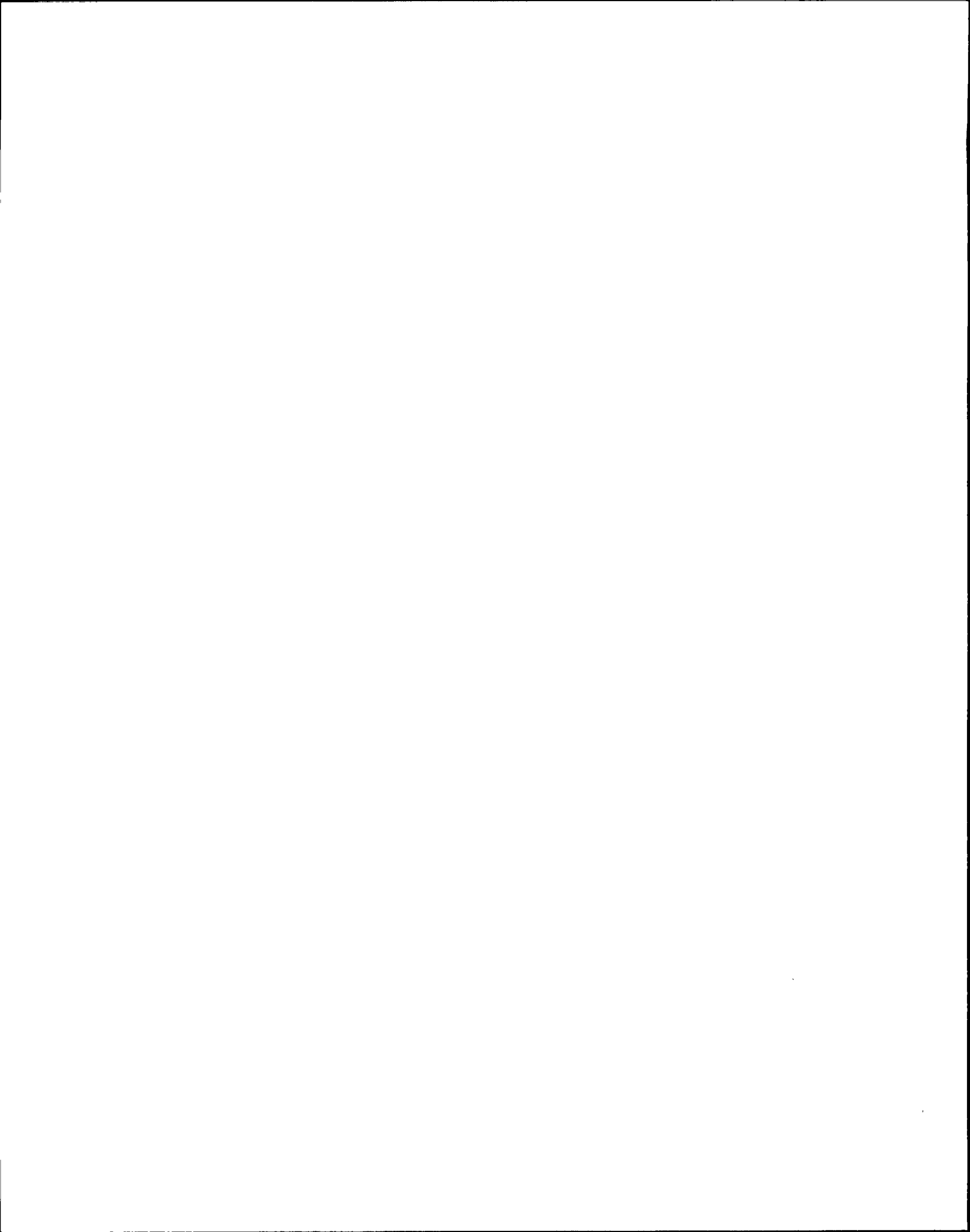
I. PROCEDURE FOR CORRECTING ALARM CONDITIONS (Cont.)

22.0   <u>875224</u>   Division II RBCLCW SFC Heat Exchanger Supply/Return Valves Motor Overload

<u>Reflash: No</u>

```
+-----------------------------------+
|                                   |
|                                   |
|       DIV II RBCLCW                |
|       SFC HT EXCH                  |
|       SPLY/RTN VLVS                |
|       MOT OVERLOAD                 |
|                                   |
|                                   |
|                         875224    |
|                                   |
+-----------------------------------+
```

875224
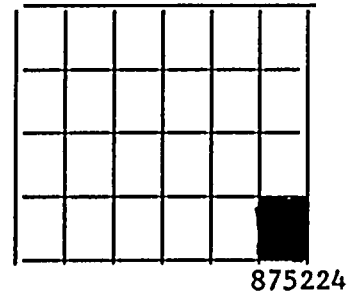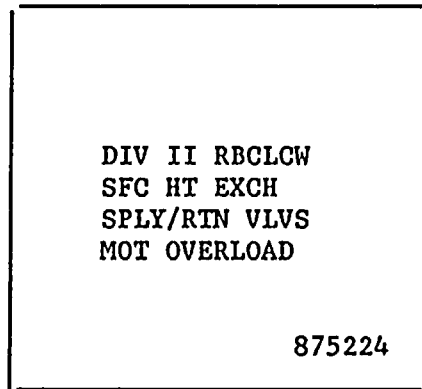
22.1

Computer Point	Computer Printout	Source
a. CCPTC40	D2 RBCLCW TO SFP HX V MOT	Motor overload on one or both of the following:

1. RBCLC To SFC HX, 2CCP*MOV 14B. As sensed by 49X–2CCPB04.

2. RBCLC From SFC HX, 2CCP*MOV 18B. As sensed by 49X–2CCPB06.

22.2   <u>Automatic Response</u>

a. The affected valve stops travel.

b. Valve travel seal–in circuitry is removed, rendering the affected valve throttleable from P875.

22.3   <u>Corrective Action</u>

<u>NOTE:</u>   Remote operation may result in motor damage.

a. If operation is required, throttle the affected valve at P875.

b. Manually position valve, as required, per the following:
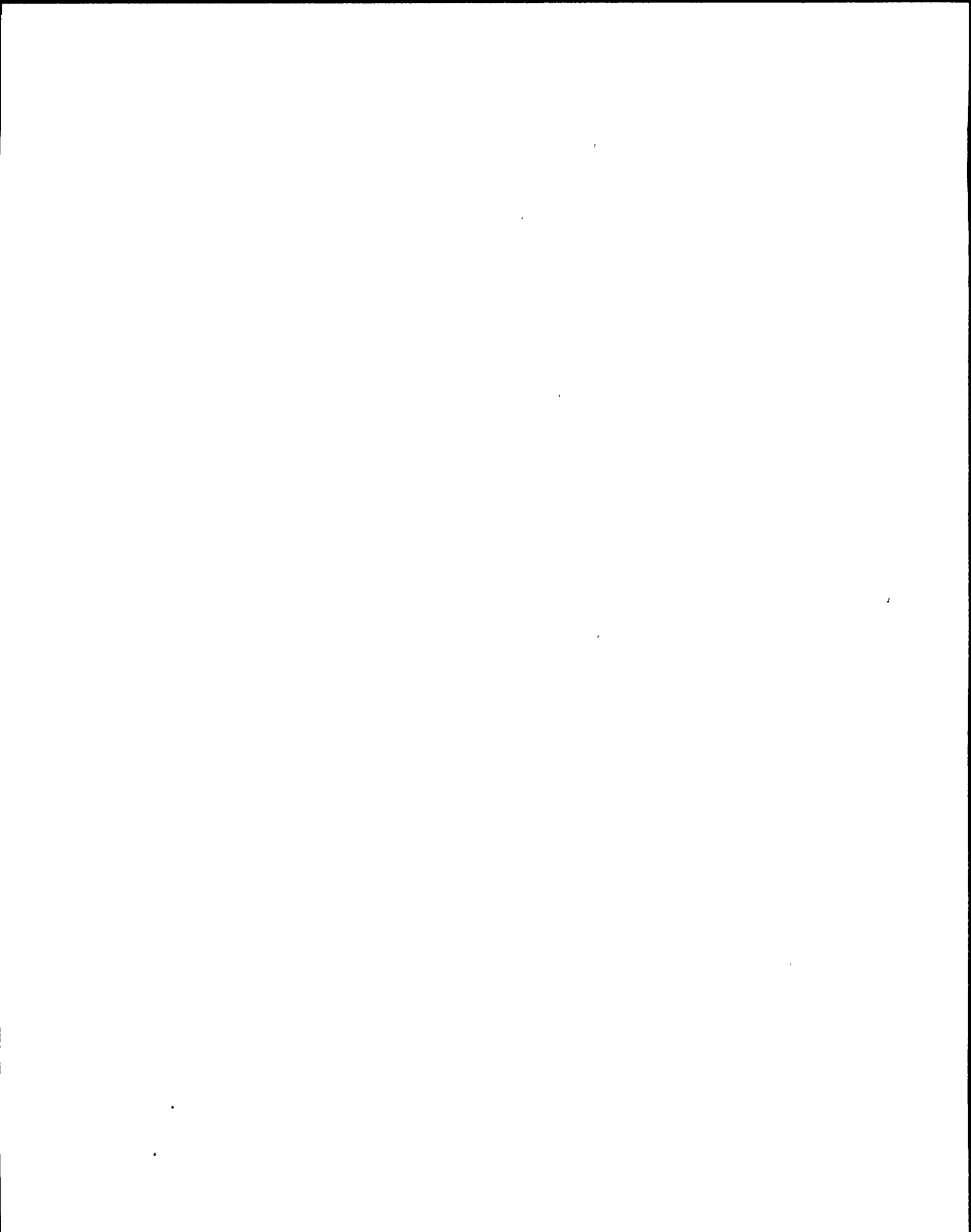
1.   De-energize the affected valve, per the table below.

2.   Position valve manually.

Valve	MCC	Cubicle
2CCP*MOV14B	2EHS*MCC303B	4A
2CCP*MOV18B	2EHS*MCC303B	4B
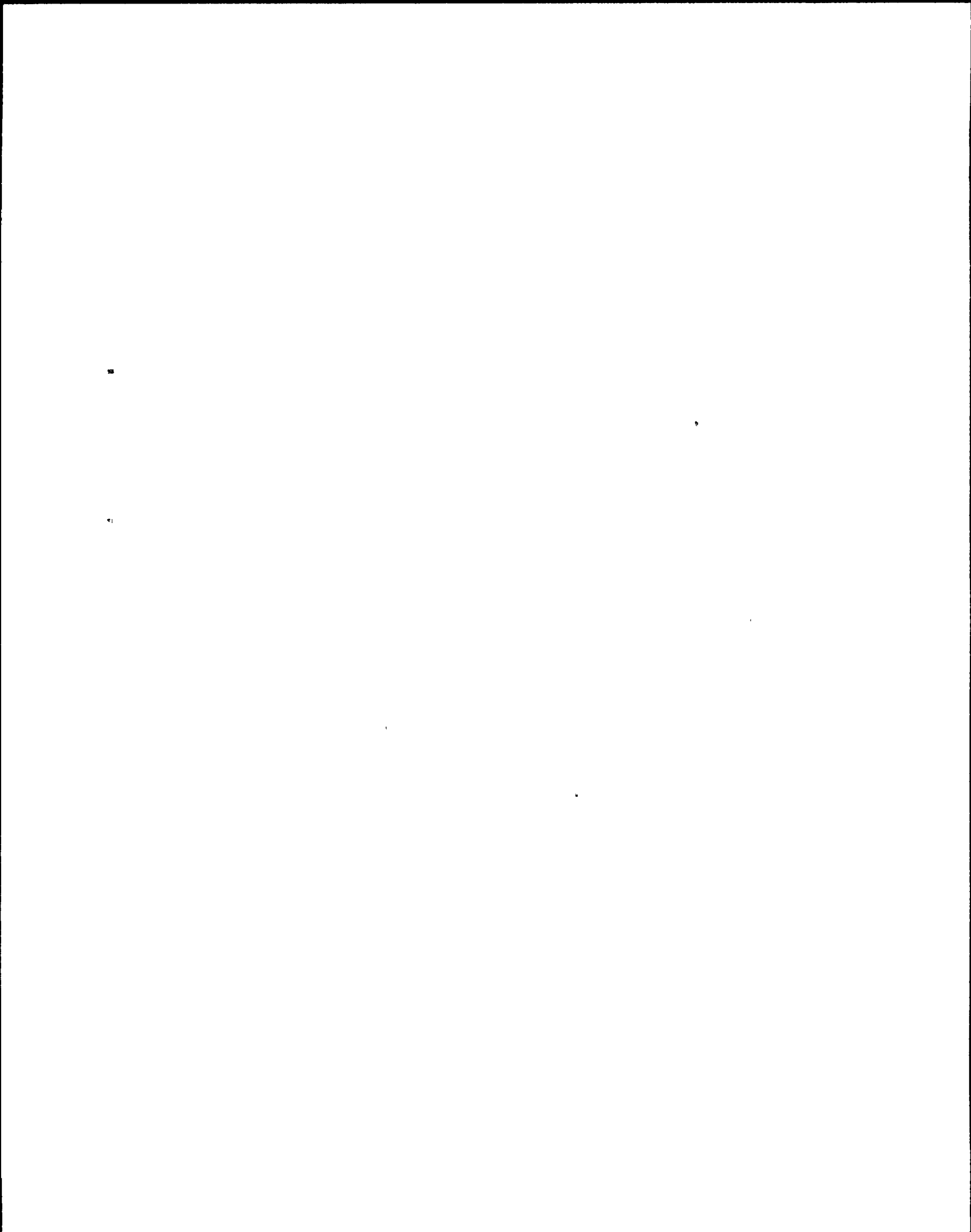
TABLE I   Page 1 of 68

VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-AOV120	RBCLC MU TK	MODULATING (P601)			
2CCP* AOV37A	RBCLC From RHR P1A SL & Brg Clr	OPEN (P601)			
2CCP* AOV37B	RBCLC From RHR P1B SL & Brg Clr	OPEN (P601)			
2CCP* AOV38A	RBCLC To RHR P1A SL & BRG Clr	OPEN (P601)			
2CCP* AOV38B	RBCLC To RHR P1B SL & Brg Clr	OPEN (P601)			
2CCP* MOV15A	RBCLC From Recirc Pump 1A Clrs	OPEN (P602)			
2CCP* MOV15B	RBCLC From Recirc Pump 1B Clrs	OPEN (P602)			
2CCP* MOV16A	RBCLC From Recirc Pump 1A Clrs	OPEN (P602)			
2CCP* MOV16B	RBCLC From Recirc Pump 1B Clrs	OPEN (P602)			
2CCP* MOV17A	RBCLC To Recirc Pump 1A Clrs	OPEN (P602)			
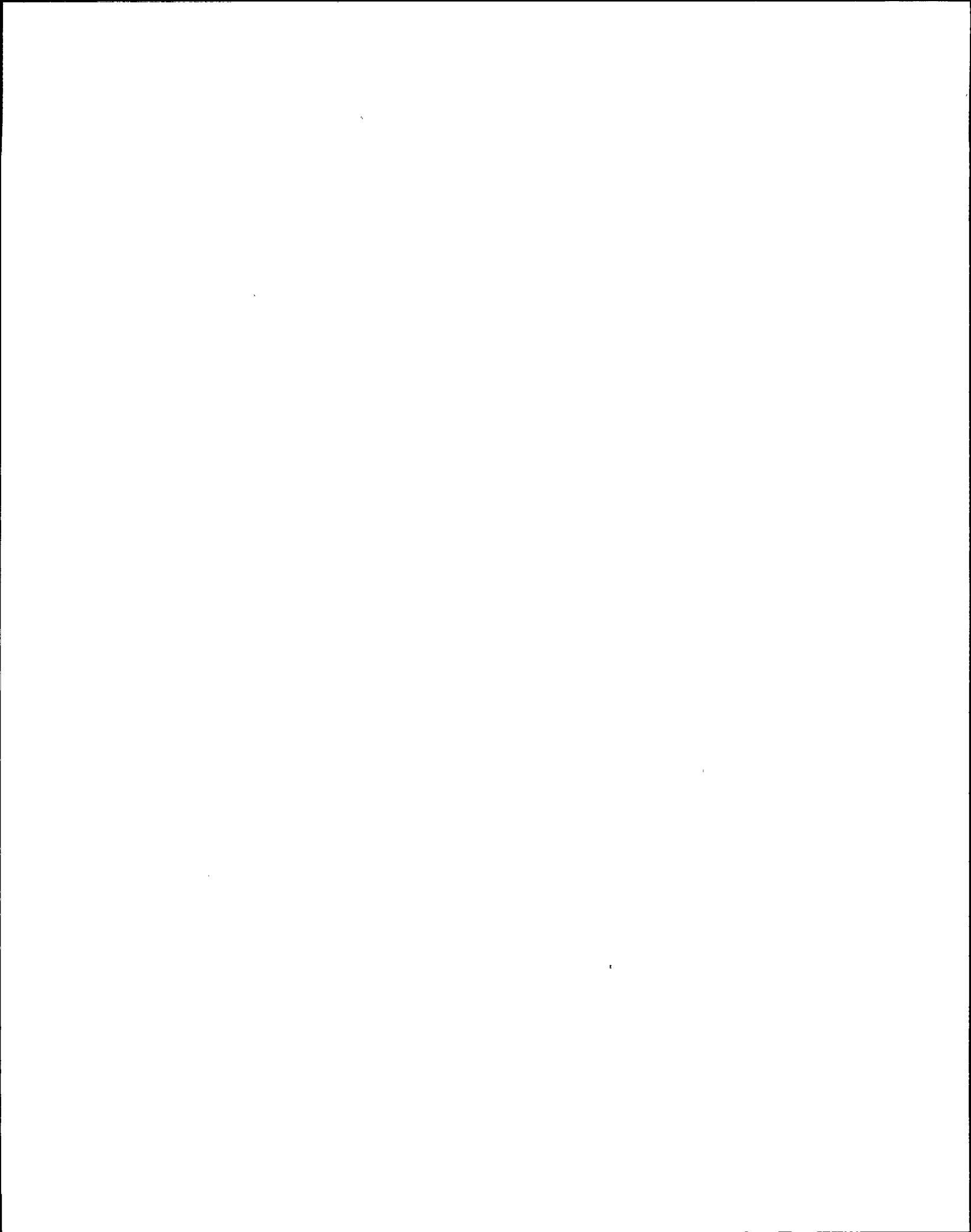
TABLE I   Page 2 of 68

VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP* MOV17B	RBCLC To Recirc Pump 1B Clrs	OPEN (P602)			
2CCP* MOV94A	RBCLC To Recirc Pump 1A Clrs	OPEN (P602)			
2CCP* MOV94B	RBCLC To Recirc Pump 1B Clrs	OPEN (P602)			
2CCP* MOV14B	RBCLC To SFP CLG Ht Exch B	OPEN (P875)			
2CCP* MOV18B	RBCLC Fr SFP Clg Ht Exch B	NOTE 1 (P875)			
2CCP* MOV14A	RBCLC To SFP CLG Heat Exch A	OPEN (P873)			

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NOTE 1: Open when Heat Exchanger is in service, otherwise shut.

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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP* MOV18A	RBCLC Fr SFP Clg Heat Exch A	NOTE 1 (P873)			
2CCP- MOV1A	RBCLC To DW Clr UC1A Block Vlv	OPEN (P873)			
2CCP- MOV1B	RBCLC To DW Clr UC1B Block Vlv	OPEN (P873)			
2CCP- MOV1C	RBCLC To DW Clr UC1C Block Vlv	OPEN (P873)			
2CCP- MOV1D	RBCLC To DW Clr UC1D Block Vlv	OPEN (P873)			
2CCP- MOV2A	RBCLC To DW Clr UC2A Block Vlv	OPEN (P873)			
2CCP- MOV2B	RBCLC To DW Clr UC2B Block Vlv	OPEN (P873)			
2CCP- MOV2C	RBCLC To DW Clr UC2C Block Vlv	OPEN (P873)			
2CCP- MOV2D	RBCLC To DW Clr UC2D Block Vlv	OPEN (P873)			
2CCP- MOV3A	RBCLC To DW Clr UC3A Block Vlv	OPEN (P873)			

NOTE 1: Open when Heat Exchanger is in service, otherwise shut.

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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-MOV3B	RBCLC To DW Clr UC3B Block Vlv	CLOSED (P873)			
2CCP* MOV122	RBCLC From Drywell Coolers Inbd IV	OPEN (P873)			
2CCP* MOV124	RBCLC From Drywell Coolers Outbd IV	OPEN (P873)			
2CCP* MOV265	RBCLC To Drywell Coolers Outbd IV	OPEN (P873)			
2CCP* MOV273	RBCLC To Drywell Coolers Inbd IV	OPEN (P873)			
2CCP-AOV180	TK2 Level Control Valve	Modulating (P851)			

RX. BLDG. ELEV. 328'

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V785	M/U Water to CCP M/U Tank Check	Installed			
2CCP-V783	AOV 120 Manual Isolation	OPEN			
2CCP-V483	AOV120 Manual Isolation	OPEN			
2CCP-V784	AOV120 Bypass Line Isolation	SHUT			
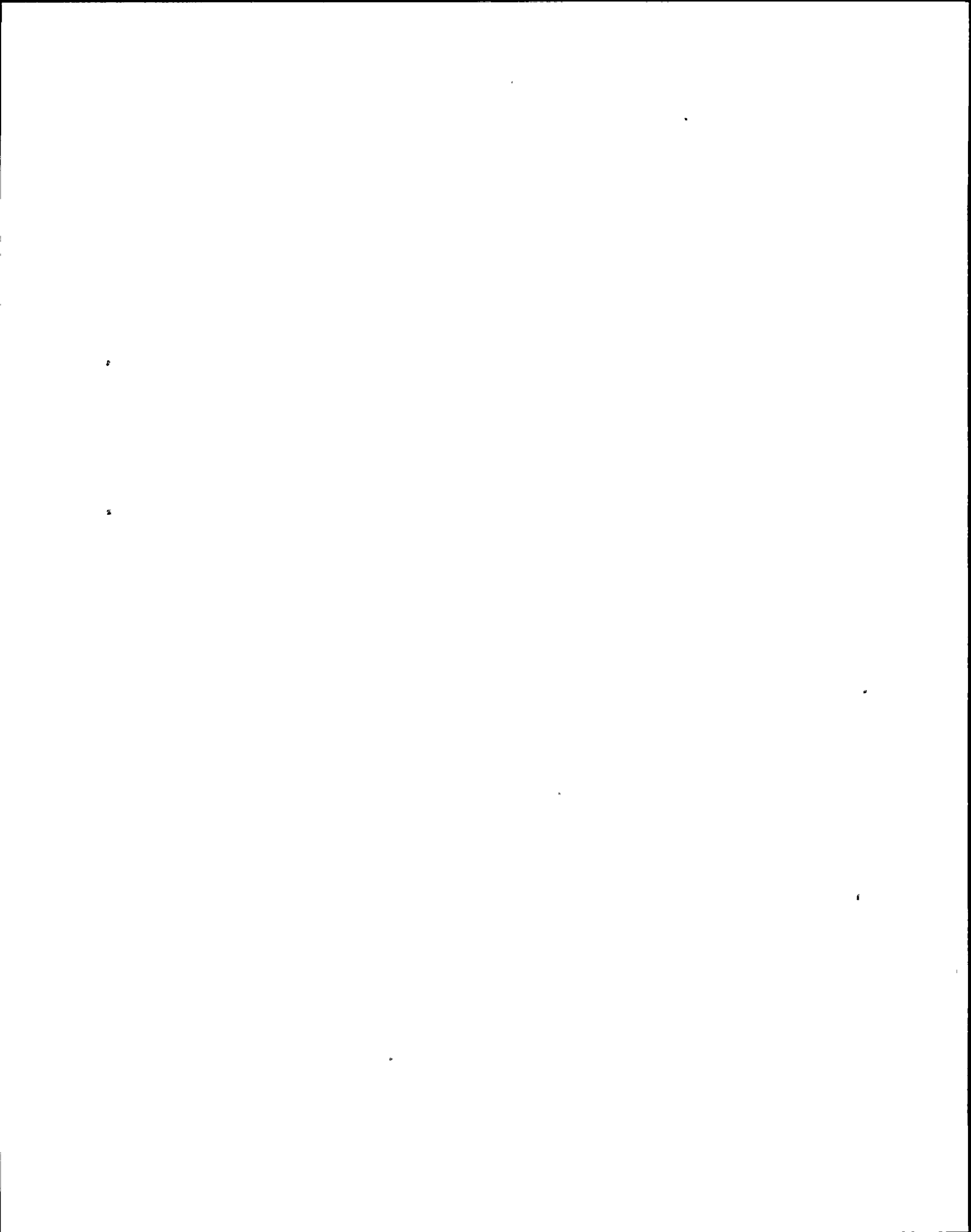
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V942	M/U Water Line To CCP M/U Tank Drain	SHUT and PLUGGED			
2CCP-V941	M/U Water Line To CCP M/U Tank Vent	SHUT and PLUGGED			
2CCP-V182	CCP M/U Tnk Instrument Hdr Isol	OPEN			
2CCP-V183	CCP M/U Tnk Instrument Hdr Isol	OPEN			
2CCP-V484	LI121 Instrument Root Isol	OPEN			
2CCP-V185	Instrument Header Vent	SHUT AND CAPPED			
2CCP-V184	Instrument Header Drain	SHUT AND CAPPED			
2CCP-V180	Isolation for LS120	OPEN			
2CCP-V181	Isolation for LS120	OPEN			
2CCP-V371	LS120 Instrument Vent	SHUT AND CAPPED			
2CCP-V374	LS120 Instrument Drain	SHUT AND CAPPED			
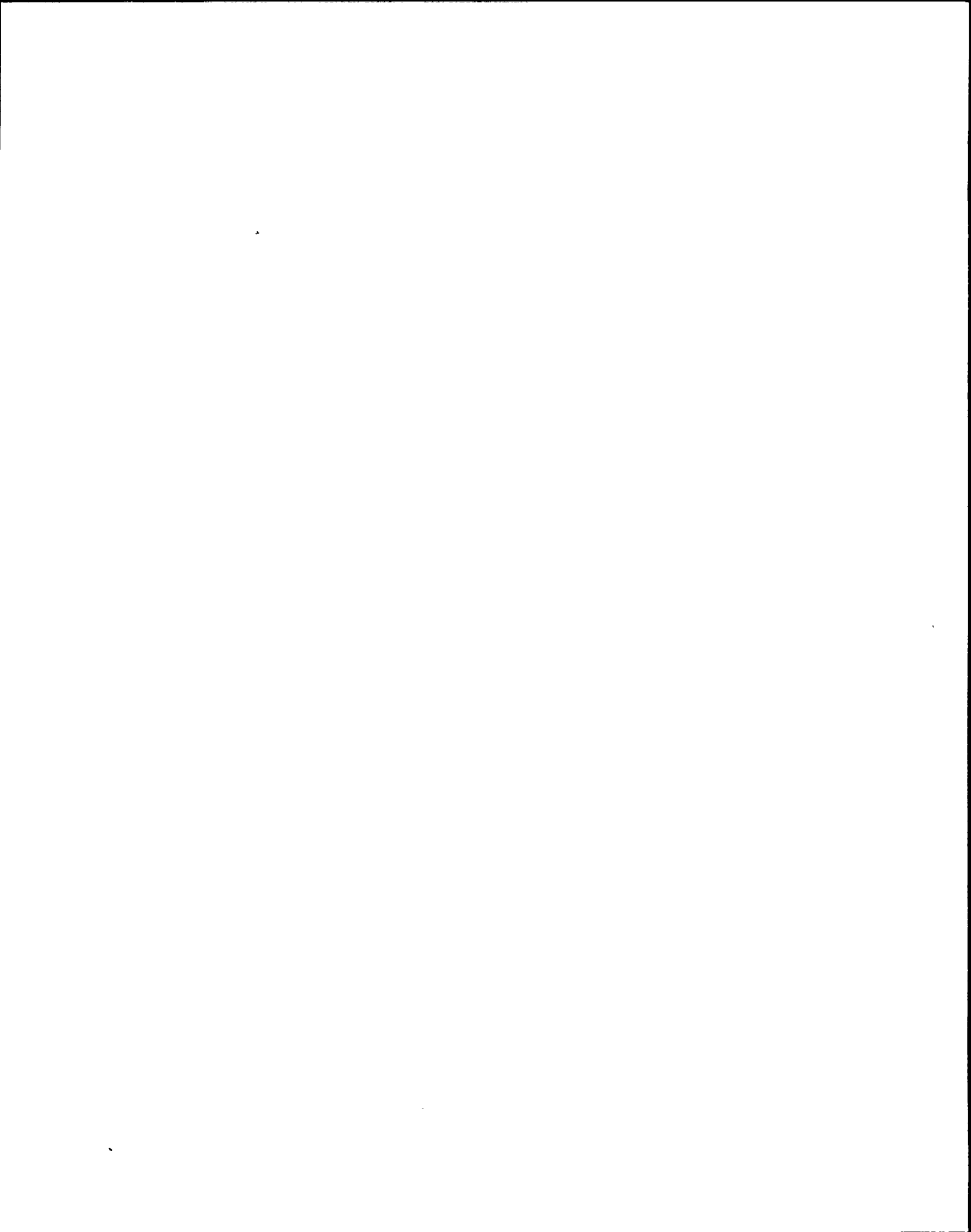
TABLE I   Page 6 of 68

VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V176	LS102 Instrument Root Isol	OPEN			
2CCP-V177	LS102 Inst Root Isol	OPEN			
2CCP-V370	LS102 Inst Vent	SHUT AND CAPPED			
2CCP-V372	LS102 Inst Drain	SHUT AND CAPPED			
2CCP-V178	LS110 Inst Root Isol	OPEN			
2CCP-V179	LS110 Inst Root Isol	OPEN			
2CCP-V373	LS110 Inst Vent	SHUT AND CAPPED			
2CCP-V375	LS110 Inst Drain	SHUT AND CAPPED			
2CCP-V267	Pump Suct Hdr Sample	SHUT AND CAPPED			
2CCP-V1	P1A Suct Isolation	OPEN			
2CCP-V940	Isol From Post Accid Sample Sys	OPEN			
2CCP-V970	CCP From PASS Vent	SHUT AND CAPPED			
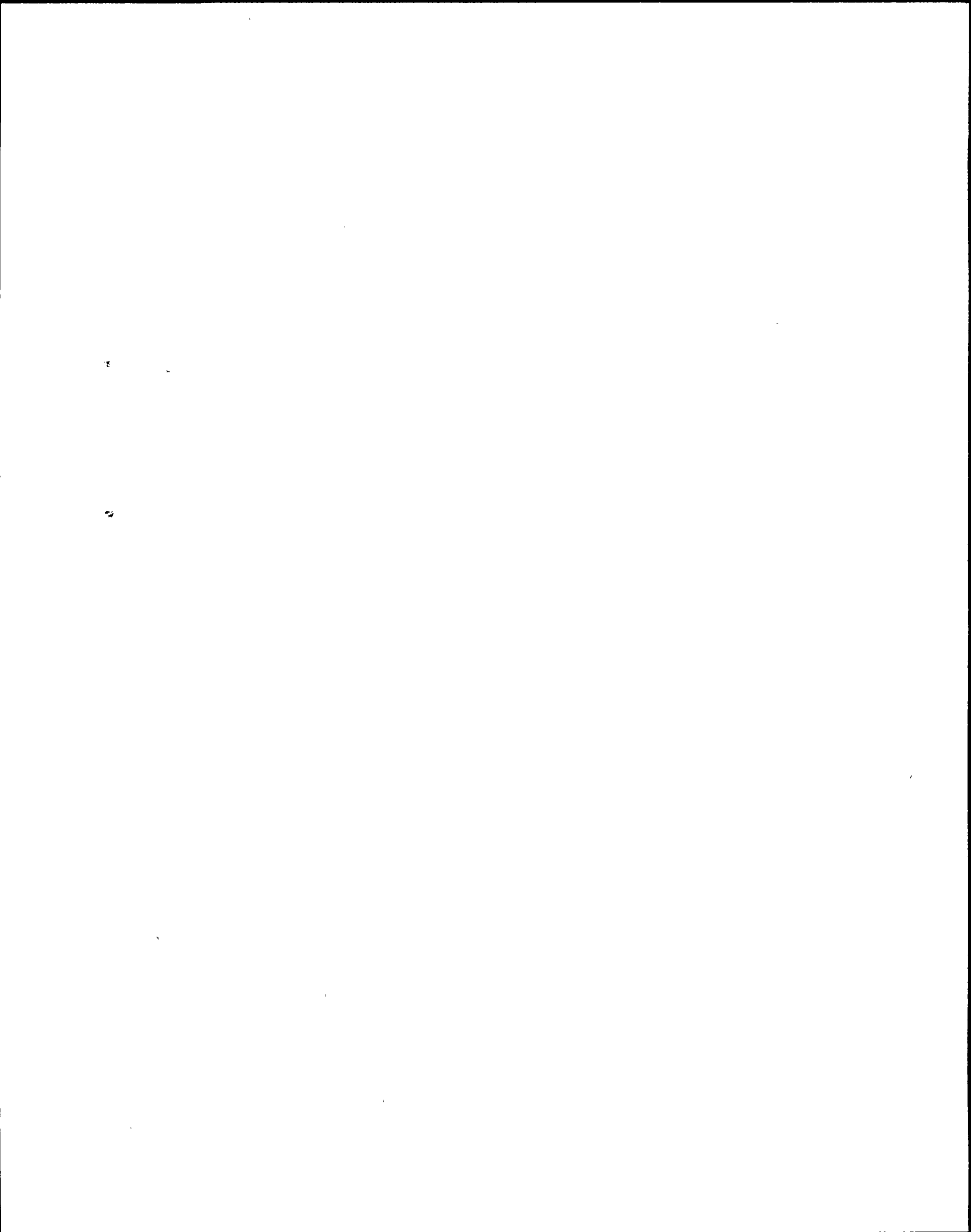
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V488	P1A Suct Strnr 1A Drain	SHUT AND CAPPED			
2CCP-V668	Strnr 1A Test Conn	SHUT AND CAPPED			
2CCP-V608	Strnr 1A Test Conn	SHUT AND CAPPED			
2CCP-V189	PI57A, PS67A Inst Root Isolation	OPEN			
2CCP-V680	P1A Suction Line Drain	SHUT			
2CCP-V200	P1A Drain	SHUT			
2CCP-V195	P1A Vent	SHUT AND CAPPED			
2CCP-V192	PI58A Inst Root Isol	OPEN			
2CCP-V7	P1A Disch Stop Check	OPEN			
2CCP-V140	P1 Common Disch Hdr Vent	SHUT AND CAPPED			
2CCP-V485	CCP M/U Tk Drain Isolation	SHUT			
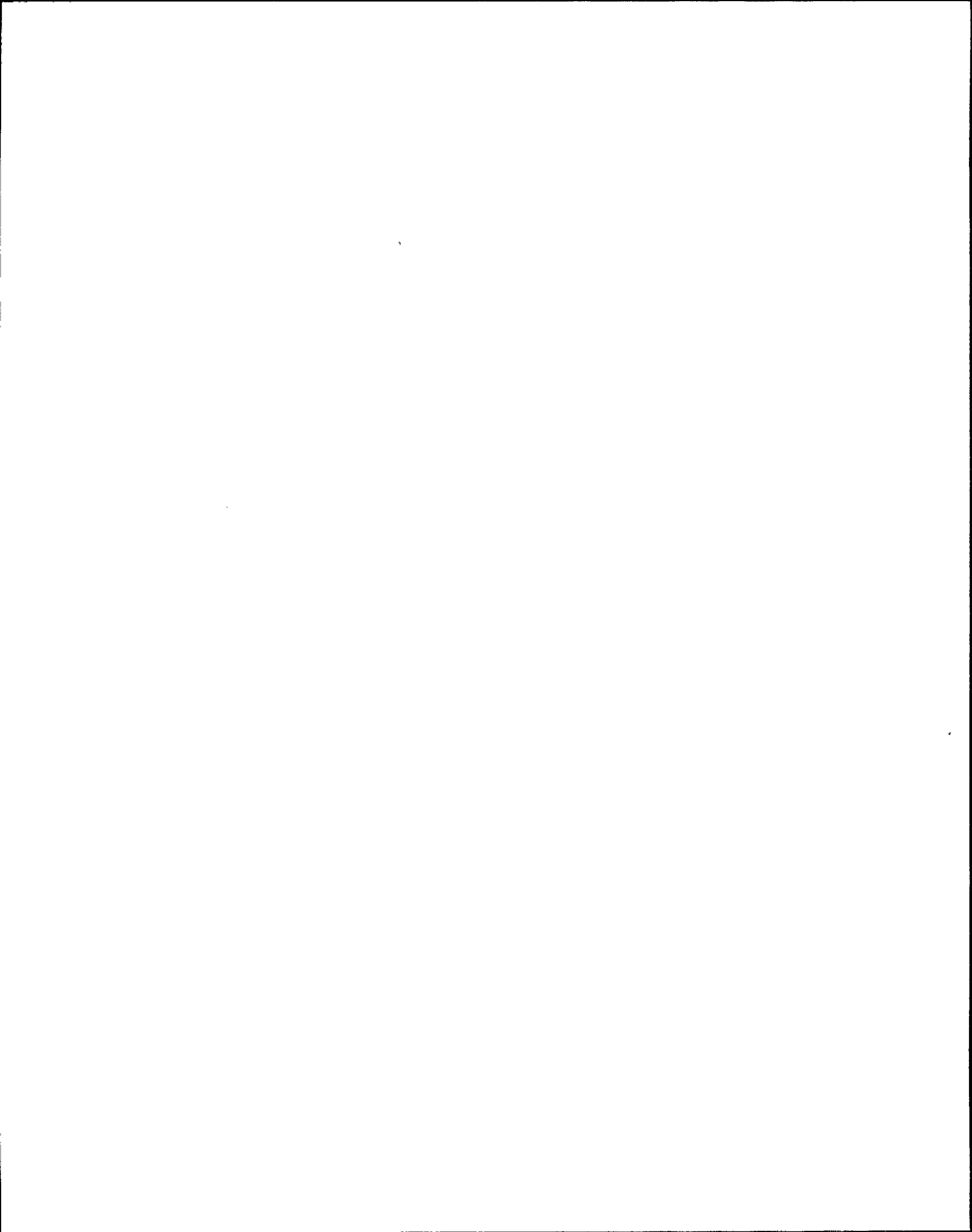
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V110	CCP M/U Tk Disch Isol	OPEN			
2CCP-V221	P1 Common Suction Hdr Vent	SHUT AND CAPPED			
2CCP-V2	P1B Suction Isolation	OPEN			
2CCP-V666	Strnr 1B Test Conn	SHUT AND CAPPED			
2CCP-V667	Strnr 1B Test Conn	SHUT AND CAPPED			
2CCP-V487	P1B Suction Strnr 1B Drain	SHUT AND CAPPED			
2CCP-V190	PI57B, PS67B Inst Root Isolation	OPEN			
2CCP-V664	P1B Suction Line Drain	SHUT			
2CCP-V196	P1B Vent	SHUT AND CAPPED			
2CCP-V199	P1B Drain	SHUT			
2CCP-V193	PI58B Inst Root Isol	OPEN			
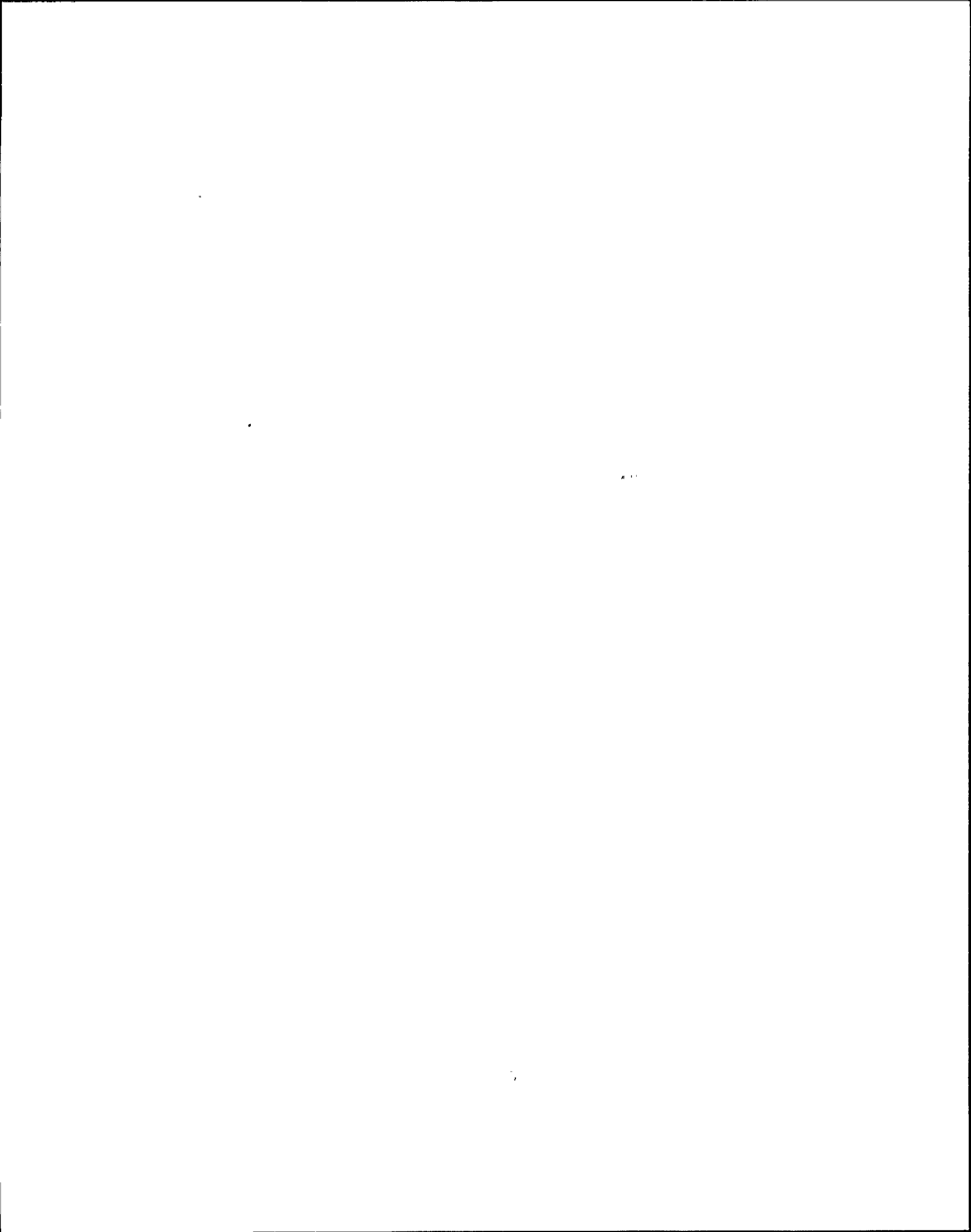
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V8	P1B Disch Stop Check	OPEN			
2CCP-V3	P1C Suction Isolation	OPEN			
2CCP-V665	Strnr 1C Test Conn	SHUT AND CAPPED			
2CCP-V673	Strnr 1C Test Conn	SHUT AND CAPPED			
2CCP-V486	P1C Suction Strnr 1C Drain	SHUT AND CAPPED			
2CCP-V191	PI57C, PS67C Inst Root Isolation	OPEN			
2CCP-V663	P1C Suction Line Drain	SHUT			
2CCP-V197	P1C Vent	SHUT AND CAPPED			
2CCP-V198	P1C Drain	SHUT			
2CCP-V194	PI58C Inst Root Isol	OPEN			
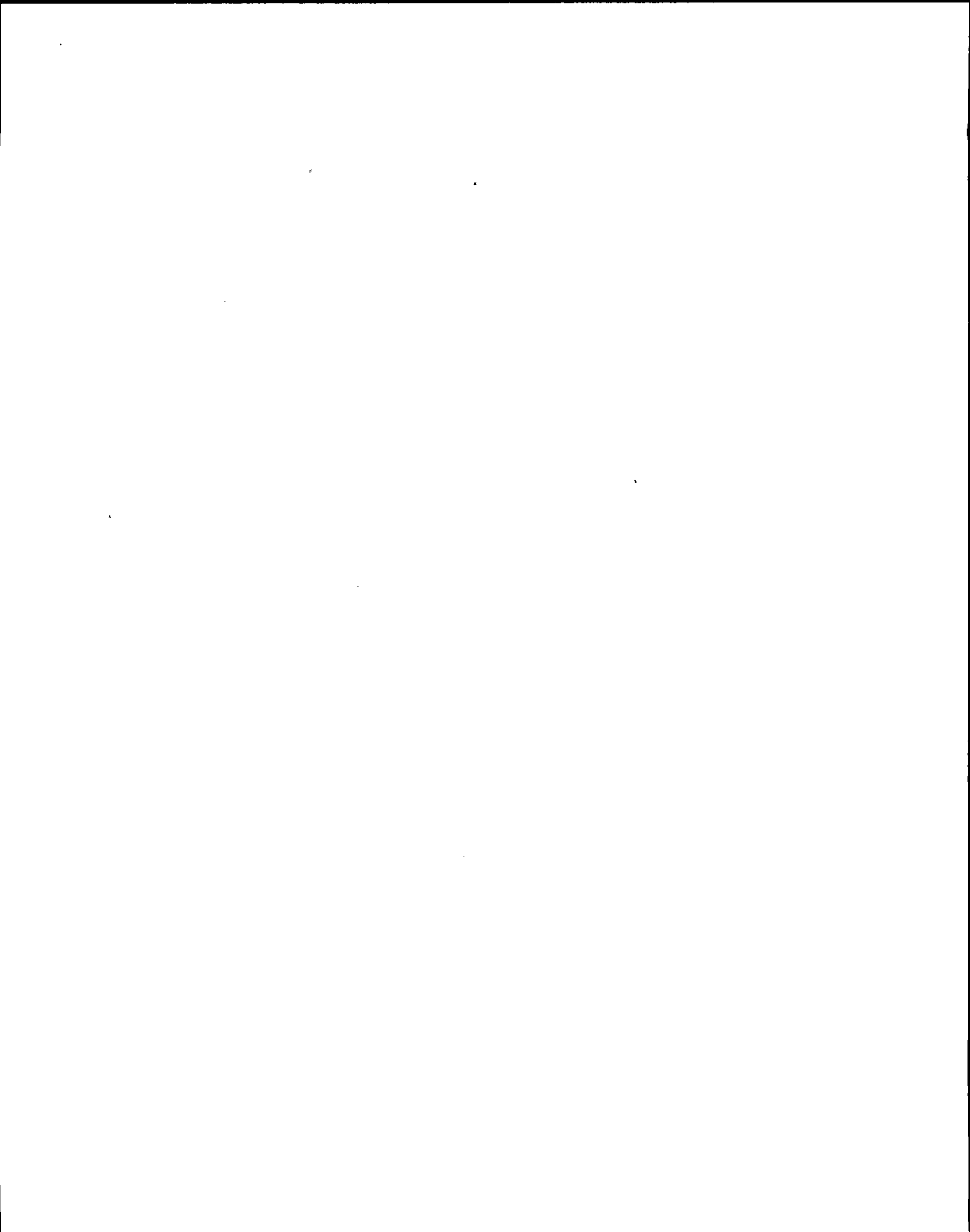
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V9	P1C Disch Stop Check	OPEN			

RX. BLDG. EL. 306'

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V658	FT129 Inst Root Isol	OPEN			
2CCP-V657	FT129 Inst Root Isol	OPEN			
2CCP-V33	PS96A, PI96A Inst Root Isolation	OPEN			
2CCP-V34	PS96B, PI96B Inst Root Isolation	OPEN			
2CCP-V351	PS96C, PI96C Inst Root Isolation	OPEN			
2CCP-V10	PT125 Inst Root Isol	OPEN			
2CCP-V158	CCP Hdr Vent	SHUT AND CAPPED			
2CCP-V13	WCS Non-Regen Hx Supply Isol	OPEN			
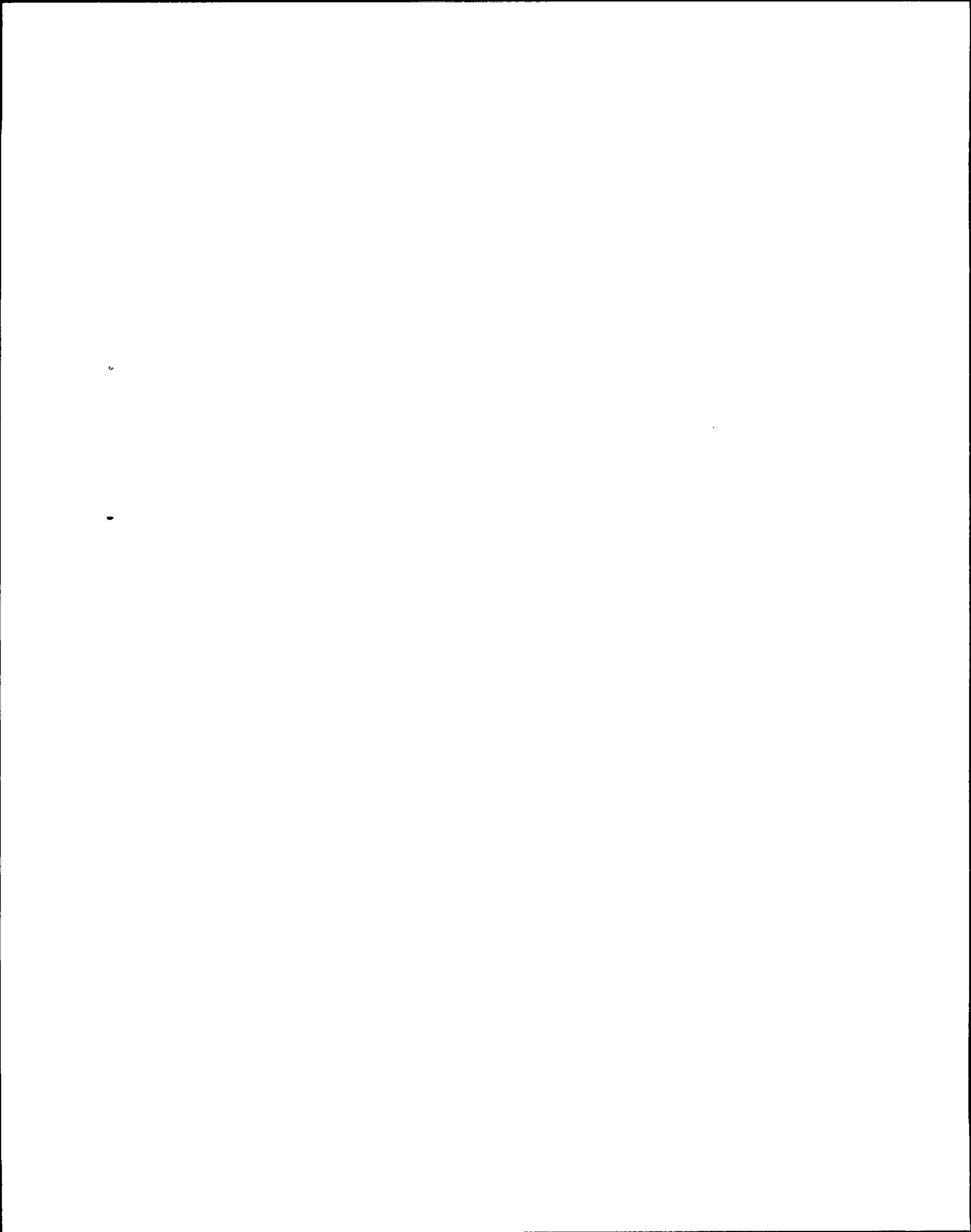
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V583	WCS Non-Regen Hx Supply Drn	SHUT AND CAPPED			
2CCP-V160	WCS Non-Regen Hx Supply Drn	SHUT AND CAPPED			
2CCP-V990	RE131 Inlet Isol	OPEN			TCN-
2CCP-V991	RE Cabinet 131 Inlet Isolation	OPEN			TCN-:
2CCP-V948	RE131 Inlet Isol	OPEN			
2CCP-V946	RE Cabinet 131 Outlet Isolation	OPEN			
2CCP-FV126	WCS Non-Regen Hx Bypass	MODULATING			
2CCP-V276	FT126 Inst Root Isol	OPEN			
2CCP-V275	FT126 Inst Root Isol	OPEN			
2CCP-V500	RE131 Inst Root Isol	OPEN			
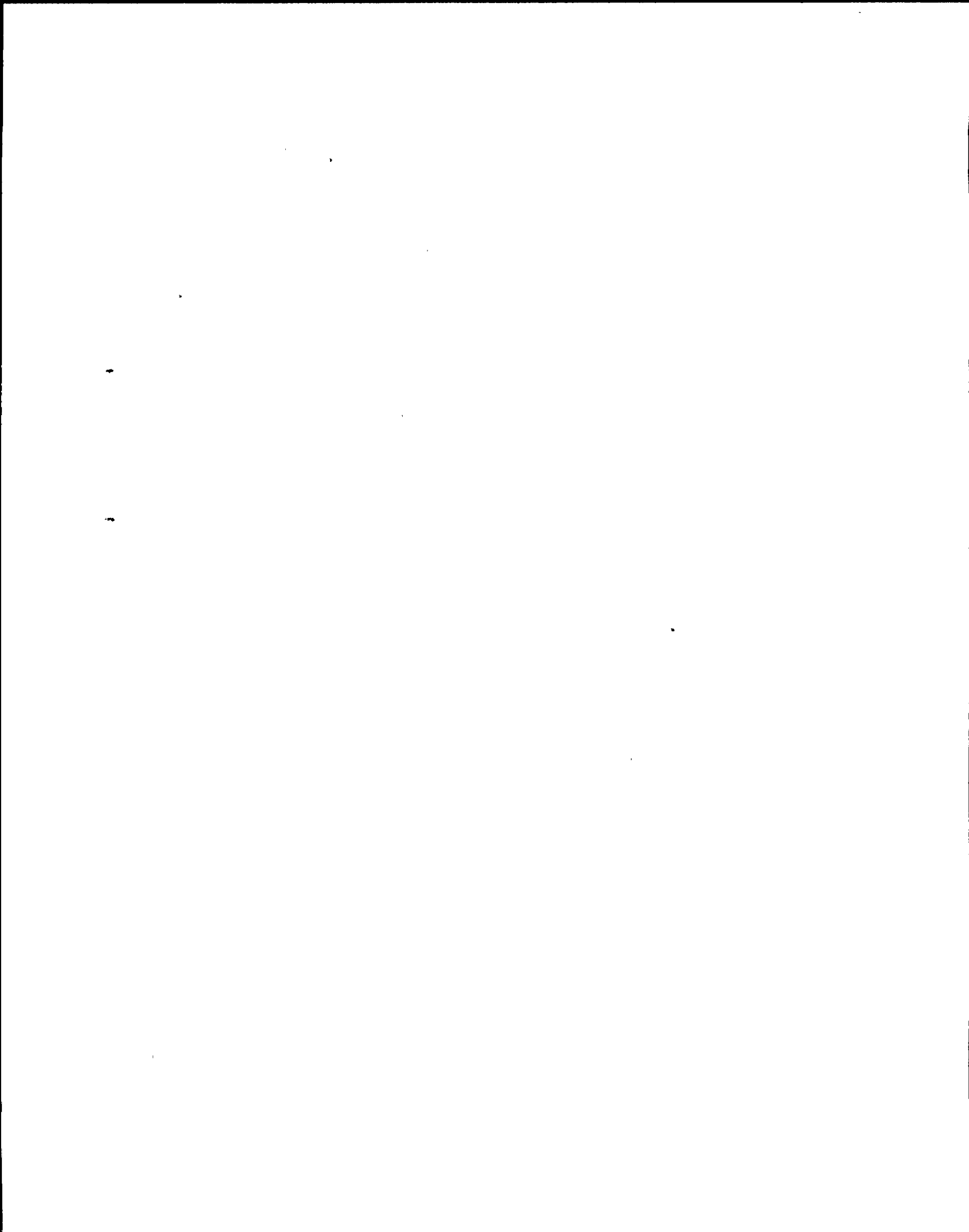
VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V501	RE131 Inst Root Isol	OPEN			
2CCP-V202	Sample Conn Dnstr Of WCS Non-Regen Hx	SHUT AND CAPPED			
2CCP-V203	Test Conn Dnstr of WCS Non-Regen Hx	SHUT AND CAPPED			
2CCP-V14	WCS Non-Regen Hx Disch Isol	THROTTLED			11.5 TURNS OPEN FROM FULL SHUT
2CCP-V248	Vent Conn Dnstr of WCS Non-Regen Hx	SHUT AND CAPPED			
2CCP-V950	RE Cabinet 142 Isolation	OPEN			
2CCP-V952	RE Cabinet 142 Isol	OPEN			
2CCP-V951	RE Cabinet 142 Isol	OPEN			
2CCP-V953	RE Cabinet 142 Isol	OPEN			
2CCP-V965	RE Cabinet 142 Isol	OPEN			
2CCP-RV270	Relief For RE CAB 142	NOT GAGGED			
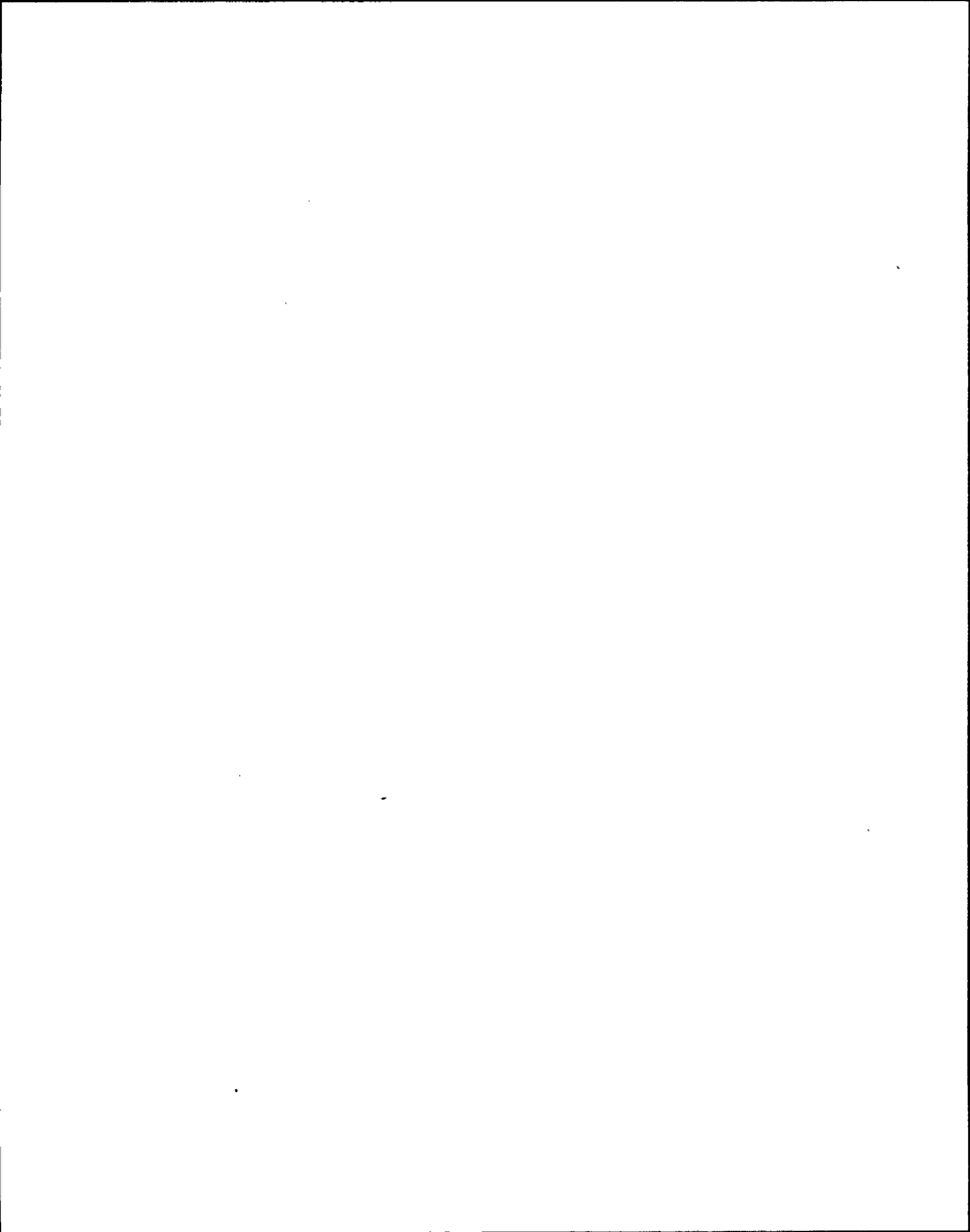
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V636	ADS Cprsr CCP Outlet	THROTTLED			50% OPEN
2CCP-V595	ADS Cprsr CCP Inlet	SHUT			
2CCP-RV106	ADS Cprsr CCP Relief	NOT GAGGED			

RX BLDG. ELEV. 261'

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V269	Vent Conn Upstr Of MOV17B	SHUT AND CAPPED			
2CCP-V59	Check Valve Dnstr Of MOV-93B	INSTALLED			
2CCP-V494	PT90B Inst Root Isol	OPEN			
2CCP-V534	Vent Conn Upstr of MOV93B	SHUT AND CAPPED			
2CCP-V939	Isol To Post Accid Sample Sys	OPEN			
2CCP-V971	CCP To Pass Vent	SHUT AND CAPPED			
2CCP-V839	Rx Recirc Sample Clr Isolation	OPEN			
2CCP-V691	Rx Recirc Sample Clr Test Conn	SHUT AND CAPPED			
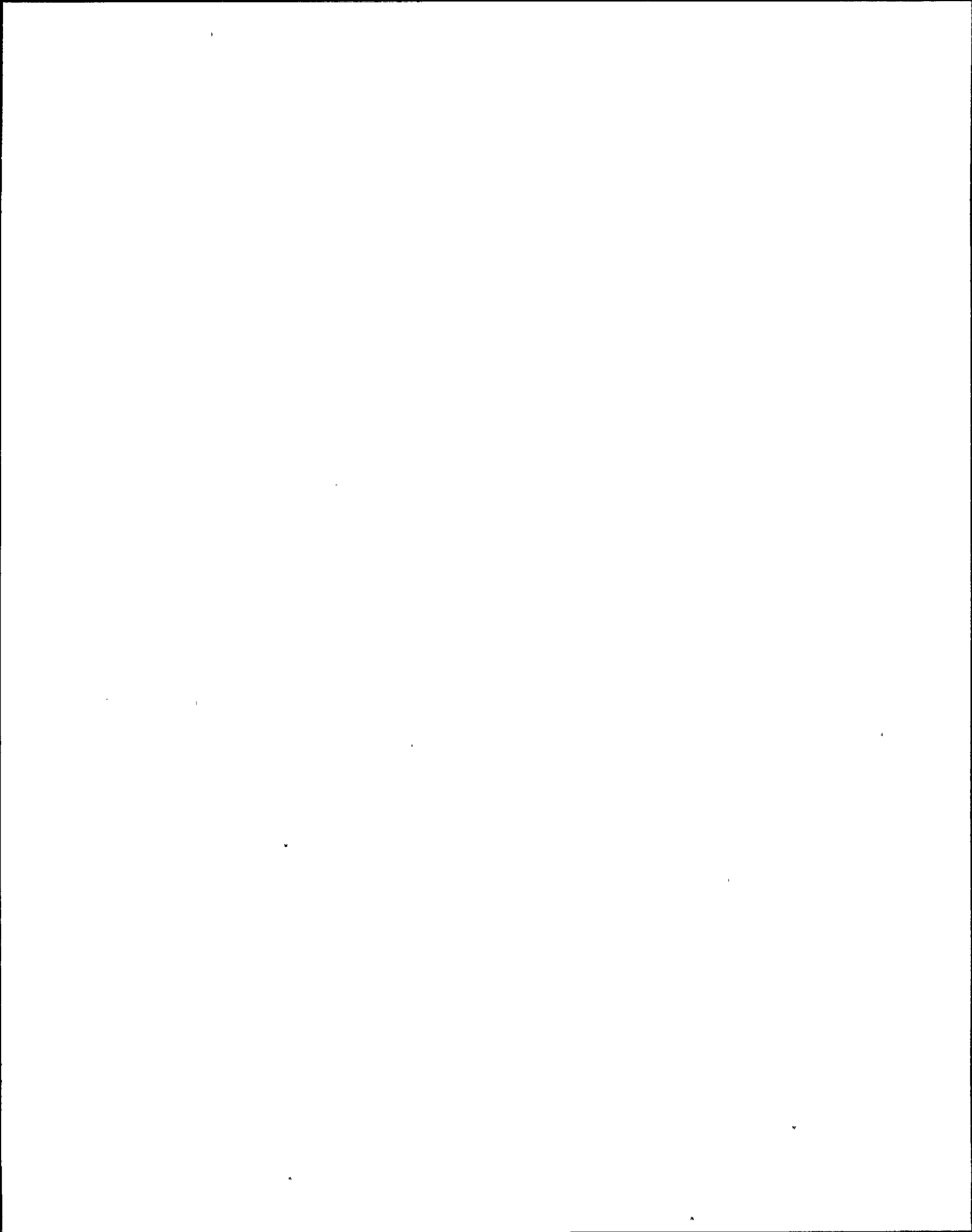
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP* MOV22B	RBCLC to Recirc Pump 1B	OPEN			NOTE 1
2CCP* MOV93B	RBCLC from Recirc Pump 1B	OPEN			NOTE 1
2CCP- V538	Drain Conn Dnstr Of MOV22B	SHUT AND CAPPED			
2CCP- V660	FT-51B Inst Root Isol	OPEN			
2CCP- V659	FT-51B Inst Root Isol	OPEN			
2CCP- V212	Vent Conn Dnstr Of MOV22B	SHUT AND CAPPED			
2CCP- RV209	Rx Recirc Sample Clr Relief	NOT GAGGED			
2CCP- V938	Rx Recirc Sample Clr Outlet Vent	SHUT AND CAPPED			
2CCP- V690	Rx Recirc Sample Clr Outlet Test Connection	SHUT AND CAPPED			
2CCP- V836	Rx Recirc Sample Clr Outlet Isol	THROTTLED			30° OPEN FROM FULL SHUT
2CCP- V366	Drain Conn Dnstr Of MOV93A	SHUT AND CAPPED			
2CCP- V117	Check Valve Dnstr Of MOV93A	INSTALLED			

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NOTE 1: There is no remote position indication for these valves. They require manual local position verification at MOV operator.

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TABLE I　　　　　　　　　　Page 15 of 68
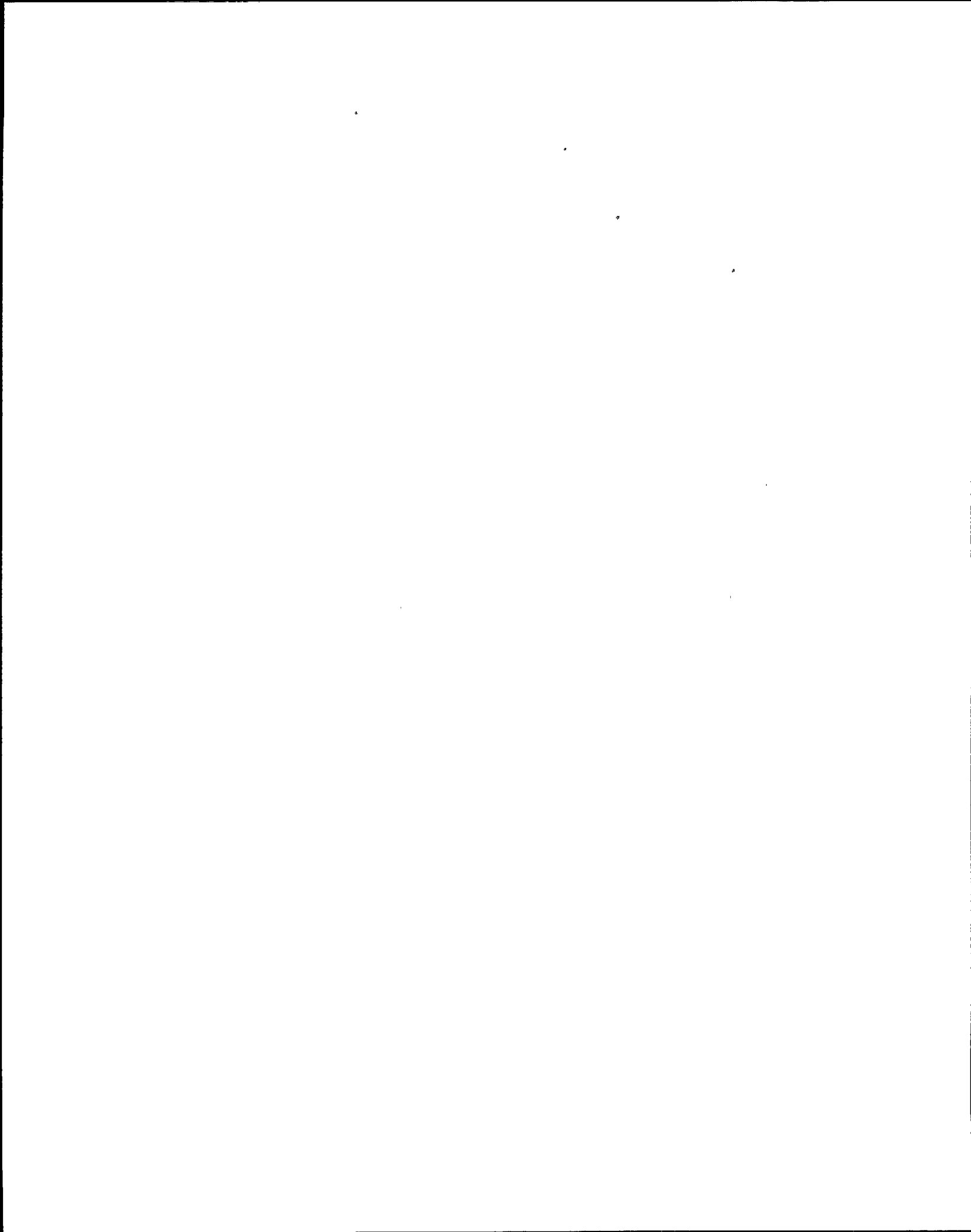
VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP* MOV22A	RBCLCW to Recirc Pump 1A	OPEN			NOTE 1
2CCP* MOV93A	RBCLCW from Recirc Pump 1A	OPEN			NOTE 1
2CCP-V493	PT90A Inst Root Isol	OPEN			
2CCP-V367	Drain Conn Dnstr Of MOV15A	SHUT AND CAPPED			

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RX. BLDG. ELEV. 240'

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V73	Vent Conn Dnstr Of MOV124	SHUT AND CAPPED			
2CCP-V513	Manual Isol For MOV-124	OPEN			
2CCP-V672	FT-135 Inst Root Isol	OPEN			
2CCP-V671	FT-135 Inst Root Isol	OPEN			
2CCP-V670	FT-266 Inst Root Isol	OPEN			
2CCP-V669	FT-266 Inst Root Isol	OPEN			
2CCP-V514	Vent Conn Upstr Of MOV265	SHUT AND CAPPED			
2CCP-V510	Manual Isol For MOV-265	OPEN			

NOTE 1: There is no remote position indication for these valves. They require manual local position verification at MOV operator.

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TABLE I   Page 16 of 68
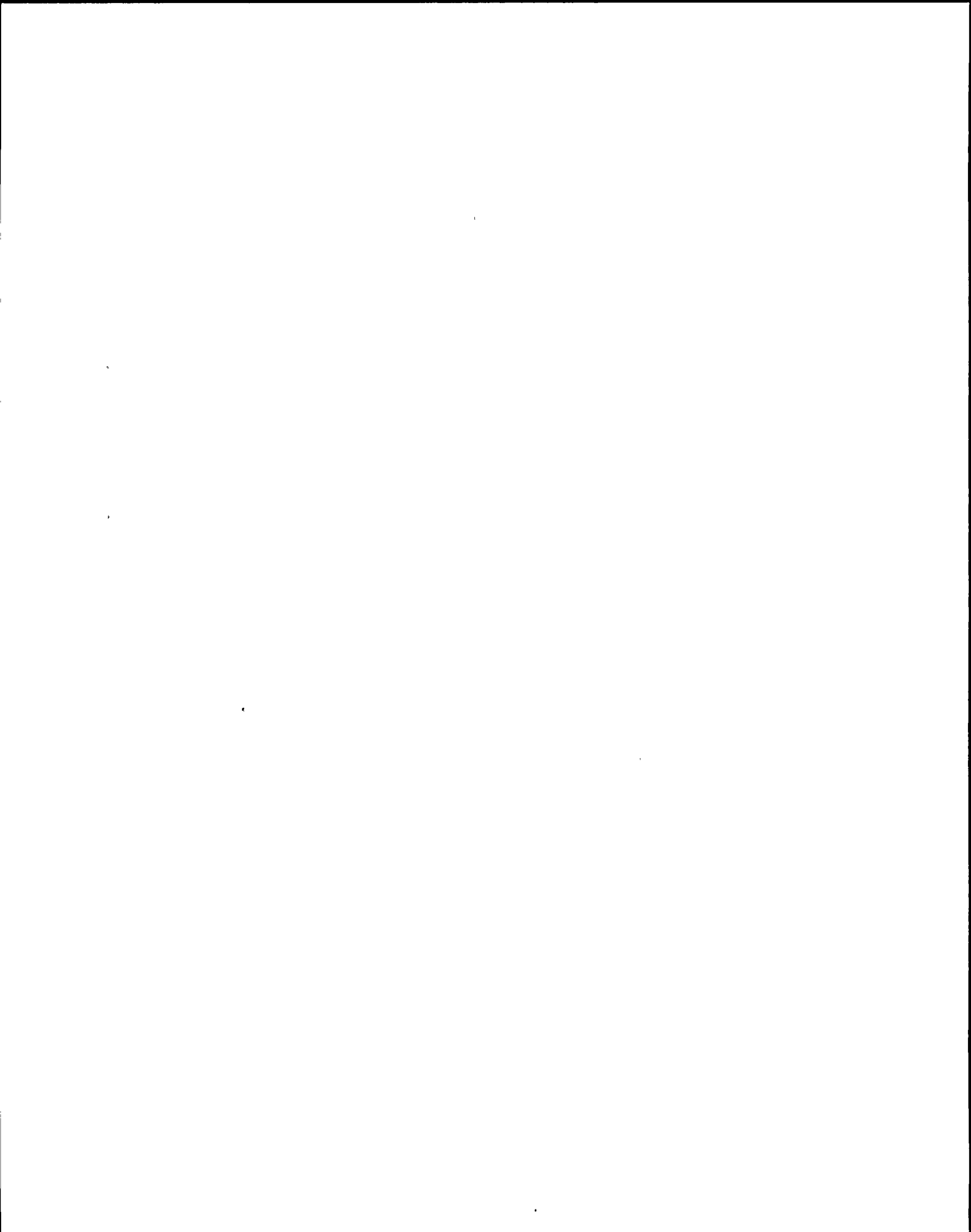
VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V244	Sample Conn Dnstr Of MOV22A	SHUT AND CAPPED			
2CCP-V678	FT51A Inst Root Isol	OPEN			
2CCP-V679	FT51A Inst Root Isol	OPEN			
2CCP-V929	Vent Conn Upstr Of SSR-IPNL145	SHUT AND CAPPED			
2CCP-V917	Vent Conn Dnstr Of SSR-IPNL145	SHUT AND CAPPED			
2CCP-V842	Isol From SSR-IPNL145	THROTTLED			20° OPEN FROM FULL SHUT
2CCP-V674	Isol To SSR-IPNL145	OPEN			
2CCP-V676	Vent Conn Upstr Of SSR-IPNL145	SHUT AND CAPPED			
2CCP-V677	Test Conn Dnstr Of SSR-IPNL145	SHUT AND CAPPED			

RX. BLDG. ELEV. 215'

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V74	Vent Conn On CCP Hx Inlet Hdr	SHUT AND CAPPED			

VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V168	CCP Hx C Inlet Isol	OPEN			
2CCP-V167	CCP Hx B Inlet Isol	OPEN			
2CCP-V166	CCP Hx A Inlet Isol	OPEN			
2CCP-V172	TV108 Inlet Blocking	OPEN			
2CCP-V174	TV108 Outlet Blocking Valve	OPEN			
2CCP-V477	Vent Conn Dnstr Of TV108	SHUT AND CAPPED			
2CCP-V173	TV108 Bypass Line Isolation	SHUT			
2CCP-V585	CCP Hx Outlet Hdr Drain	SHUT AND CAPPED			
2CCP-V926	RDS Bearing Seal Cooler Inlet Hdr Drain	SHUT AND CAPPED			
2CCP-V498	RDS Bearing Seal Cooler Inlet Hdr Vent	SHUT AND CAPPED			
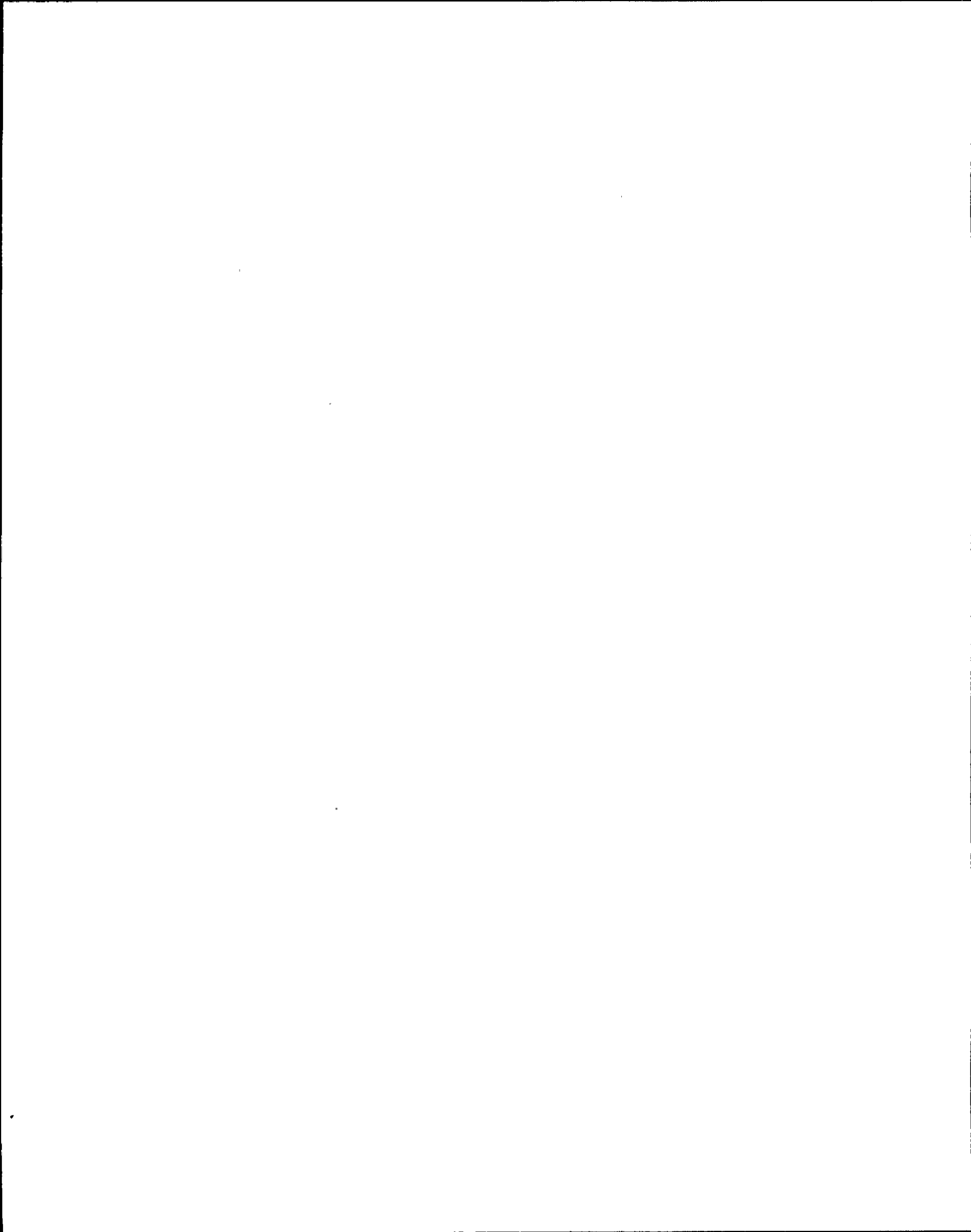
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V162	RDS P1A Bearing & Seal Cooler Inlet Isol	OPEN			
2CCP-V928	RDS P1A Brg Seal Clr Inlet Line Drain	SHUT AND CAPPED			
2CCP-V278	RDS P1A Brg Seal Clr Outlet Line Test Conn	SHUT AND CAPPED			
2CCP-V164	RDS P1A Brg & Seal Cooler Outlet Isol	THROTTLED			30° OPEN FROM FULL SHUT
2CCP-RV63A	RDS P1A Brg & Seal Clr Relief	NOT GAGGED			
2CCP-V163	RDS P1B Brg & Seal Clr Inlet Isol	OPEN			
2CCP-V927	RDS P1B Brg & Seal Clr Inlet Line Drain	SHUT AND CAPPED			
2CCP-V279	RDS P1B Brg & Seal Clr Outlet Line Test Conn	SHUT AND CAPPED			
2CCP-RV63B	RDS P1B Brg & Seal Clr Relief Valve	NOT GAGGED			
2CCP-V165	RDS P1B Brg & Seal Clr Outlet Isol	THROTTLED			45° OPEN FROM FULL SHUT
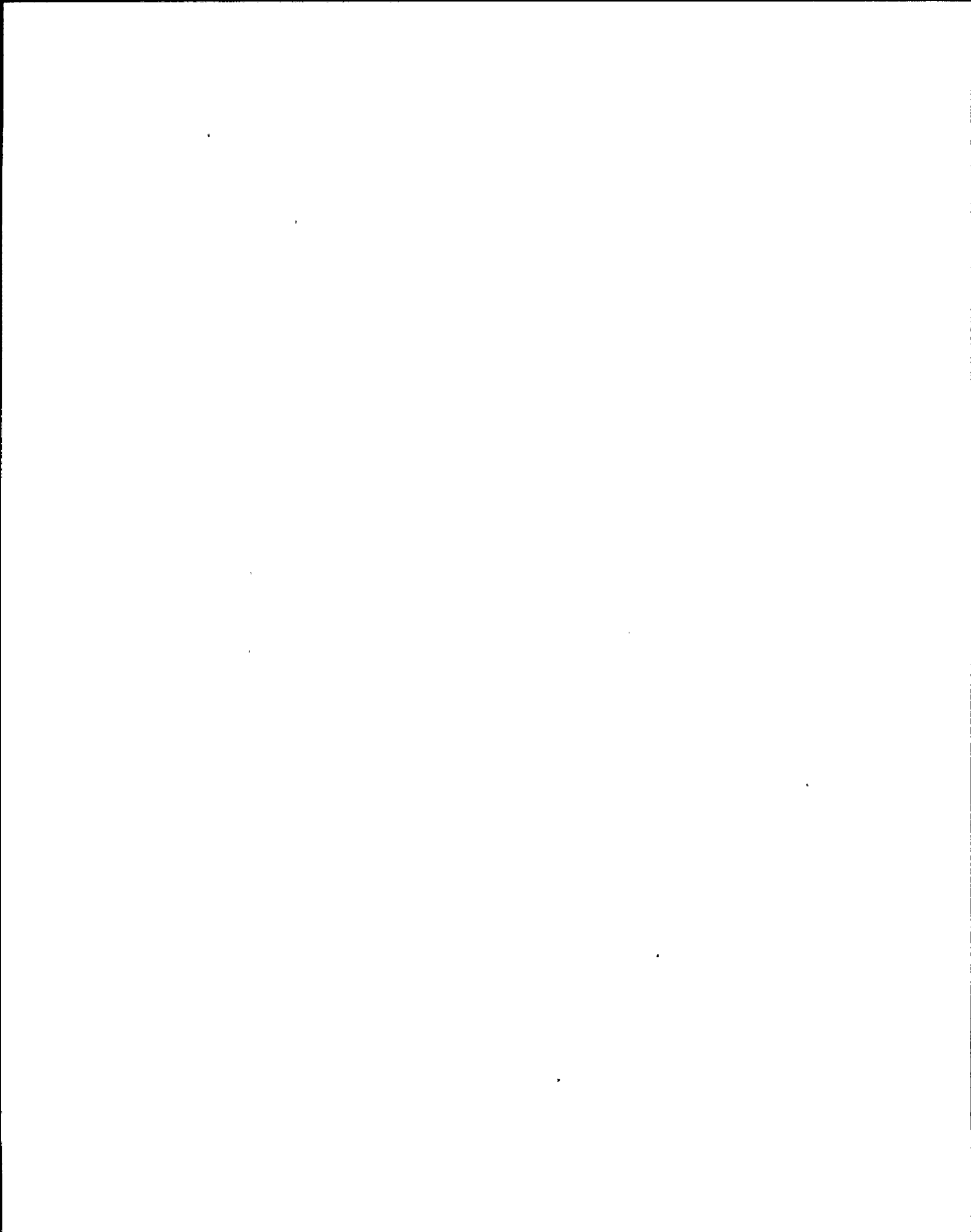
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V916	RDS Brg & Seal Clr Disch Hdr Vent	SHUT AND CAPPED			
2CCP*V161	Check Valve Downstream MOV-14A	INSTALLED			
2CCP*V234	SFC Hx 1A Inlet Test Conn	SHUT AND CAPPED			
2CCP*RV64A	SFC Hx 1A Relief	NOT GAGGED			
2CCP*V236	SFC Hx 1A Outlet Test Conn	SHUT AND CAPPED			
2CCP*V12	SFC Hx 1A Outlet Isol	THROTTLED			2 to 3 TURNS OPEN FROM FULL SHUT |TCN-3:
2CCP-V237	SFC Hx 1A Outlet Line Sample Conn	SHUT AND CAPPED			
2CCP-V502	RE115 Inst Root Isol	OPEN			
2CCP-V503	RE115 Inst Root Isol	OPEN			
2CCP-V584	WCS Pump Brg & Seal Clr Inlet Hdr Vent	SHUT			
2CCP-V353	WCS P1A Brg & Seal Clr Inlet Line Test Conn	SHUT AND CAPPED			
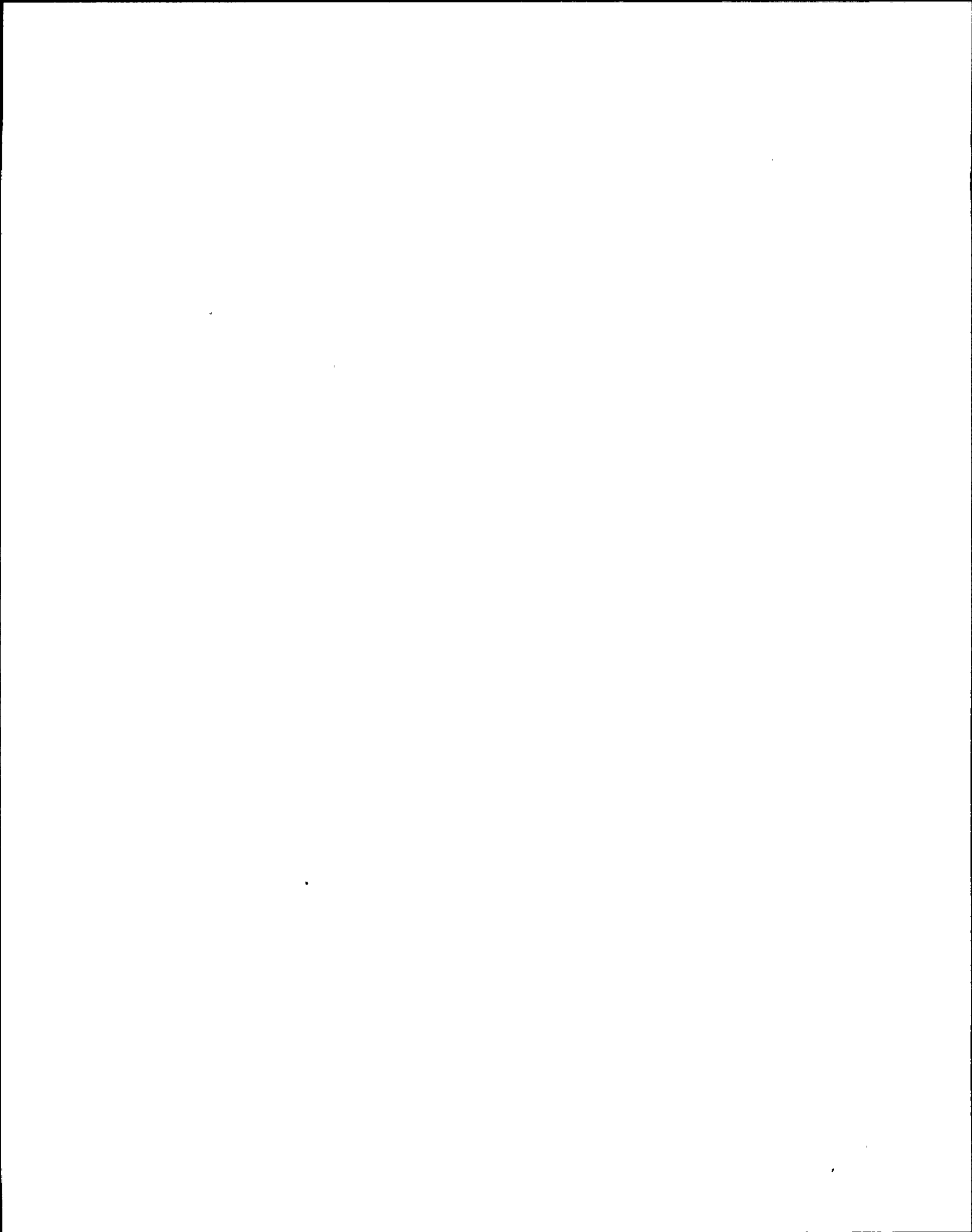
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V2001A	WCS P1A Outboard Bearing Cooling Water Outlet Isol	THROTTLED			CLOSE 4 TURNS FROM FULL OPEN
2CCP-V2002A	WCS P1A PEDESTAL Cooling Water Outlet Isol	THROTTLED			CLOSE 4 TURNS FROM FULL OPEN
2CCP-V2003A	WCS P1A Outboard Seal Jacket Cooling Water Outlet Isol	THROTTLED			CLOSE 2 TURNS FROM FULL OPEN
2CCP-V2004A	WCS P1A Inboard Seal Jacket Cooling Water Outlet Isol	THROTTLED			CLOSE 2 TURNS FROM FULL OPEN
2CCP-V2005A	WCS P1A Inboard Bearing Cooling Water Outlet Isol	THROTTLED			CLOSE 4 TURNS FROM FULL OPEN
2CCP-V2006A	WCS P1A Heat Exchanger Cooling Water Outlet Isol	OPEN			
2CCP-V832	WCS P1A Brg & Seal Clr Inlet Isol	OPEN			
2CCP-V911	WCS P1A Brg & Seal Clr Inlet Isol	OPEN			
2CCP-V962	WCS P1A Brg & Seal Clr Vent	SHUT			
2CCP-V912	WCS P1A Brg & Seal Clr Outlet Isol	OPEN			
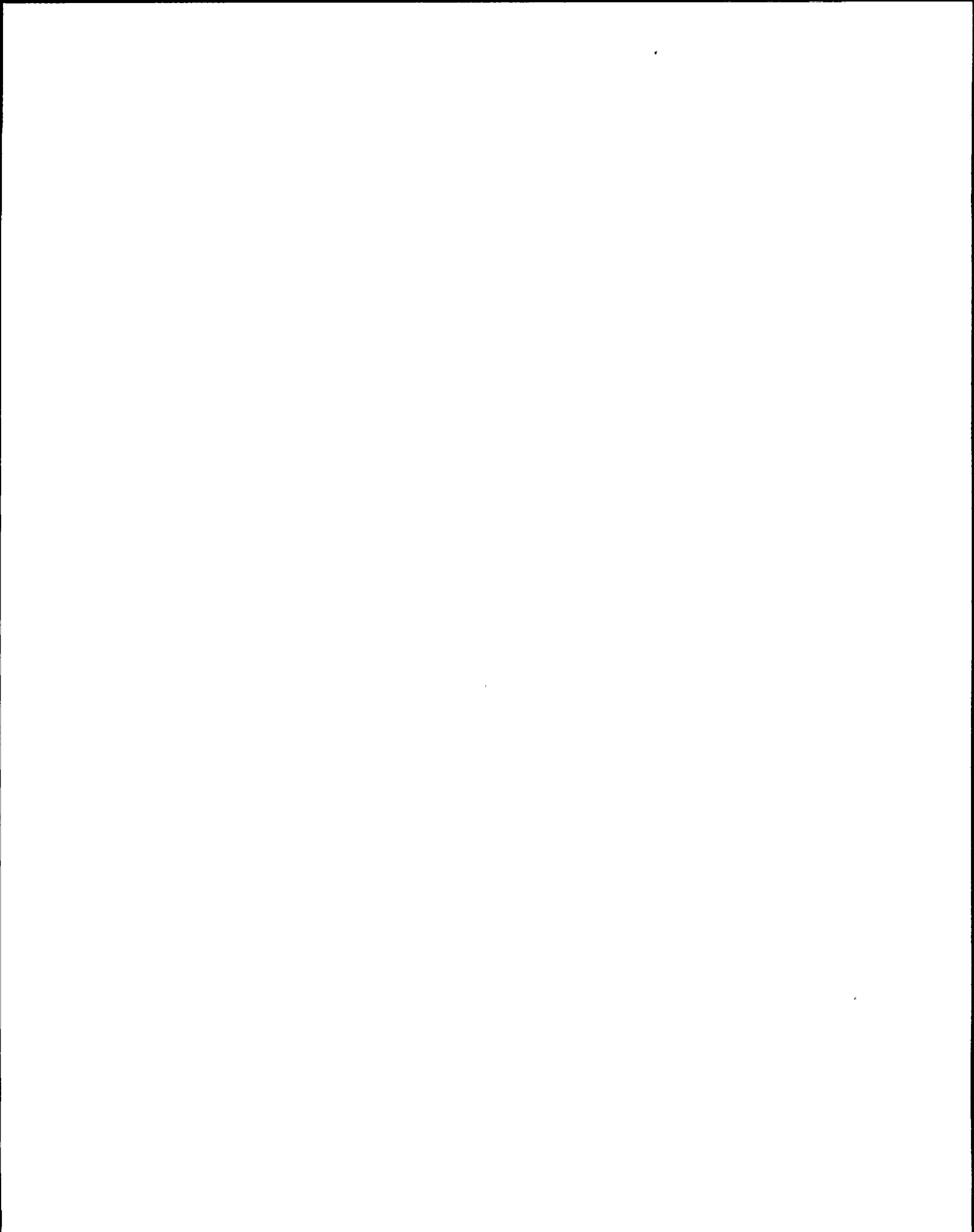
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V495	WCS P1A Brg & Seal Clr Outlet Line Test Conn	SHUT AND CAPPED			
2CCP-RV52A	WCS P1A Brg & Seal Clr Relief	NOT GAGGED			
2CCP-V834	WCS P1A Brg & Seal Clr Outlet Isol	OPEN			
2CCP-V833	WCS P1B Brg & Seal Clr Inlet Isol	OPEN			
2CCP-V913	WCS P1B Brg & Seal Clr Inlet Isol	OPEN			
2CCP-V963	WCS P1B Brg & Seal Clr Vent	SHUT			
2CCP-V914	WCS P1B Brg & Seal Clr Outlet Isol	OPEN			
2CCP-V2001B	WCS P1B Outboard Bearing Cooling Water Outlet Isol	THROTTLED			CLOSE 4 TURNS FROM FULL OPEN
2CCP-V2002B	WCS P1B Pedestal Cooling Water Outlet Isol	THROTTLED			CLOSE 4 TURNS FROM FULL OPEN
2CCP-V2003B	WCS P1B Outboard Seal Jacket Cooling Water Outlet Isol	THROTTLED			CLOSE 2 TURNS FROM FULL OPEN
2CCP-V2004B	WCS P1B Inboard Seal Jacket Cooling Water Outlet Isol	THROTTLED			CLOSE 2 TURNS FROM FULL OPEN

TCN-1((at V834 row)
TCN-1 (at V914/V2001B row)

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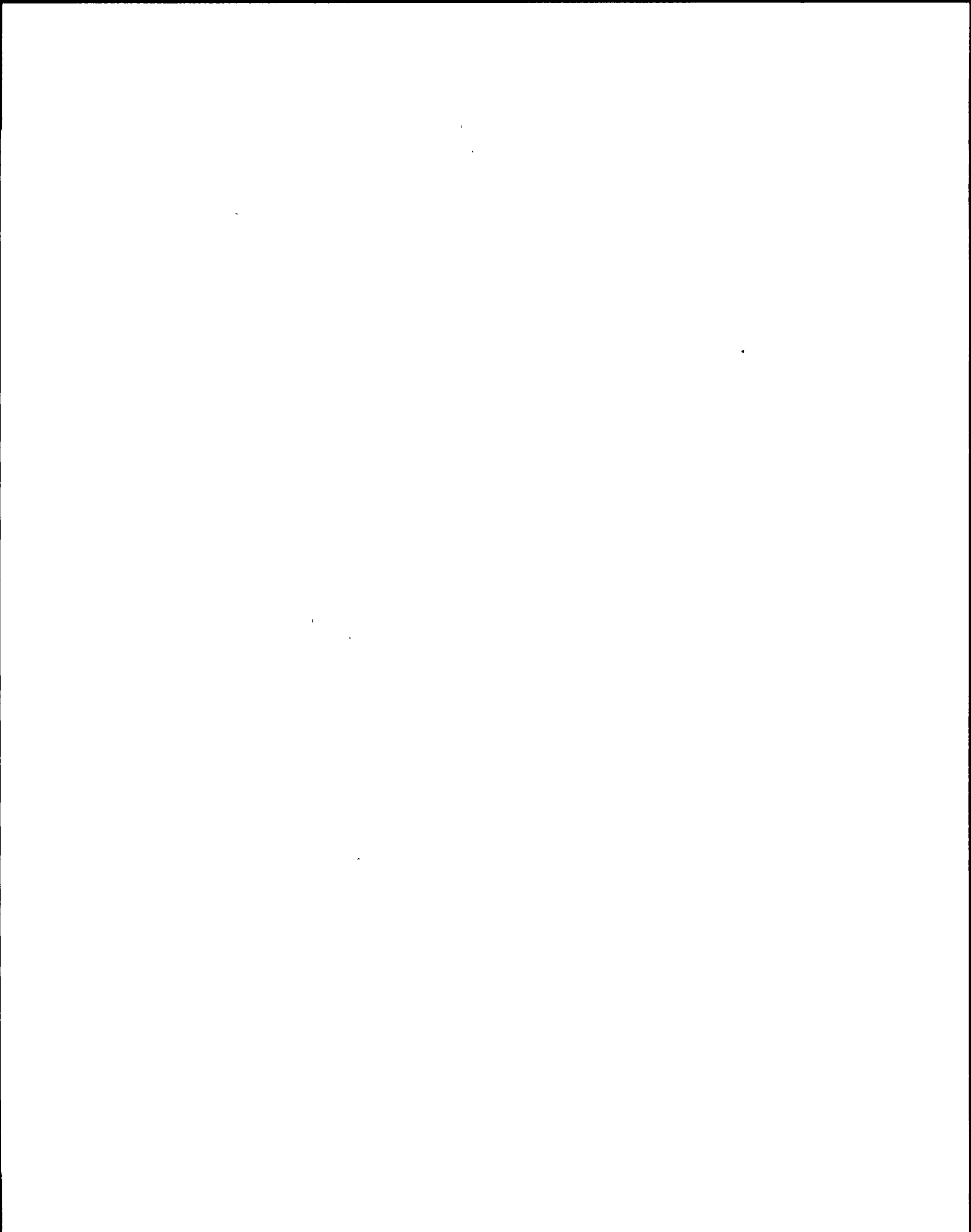
VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS	
2CCP-V2005B	WCS P1B Inboard Bearing Cooling Water Outlet Isol	THROTTLED			CLOSE 4 TURNS FROM FULL OPEN	TCN-16
2CCP-V2006B	WCS P1B Heat Exchanger Cooling Water Outlet Isol	OPEN				
2CCP-V496	WCS P1B Brg & Seal Clr Outlet Test Conn	SHUT AND CAPPED				
2CCP-RV52B	WCS P1B Brg & Seal Cooler Relief	NOT GAGGED				
2CCP-V835	WCS P1B Brg, Seal Cooler Outlet Isol	OPEN				TCN-16
2CCP-V220	WCS Brg, Seal Cooler Outlet Hdr Vent	SHUT AND CAPPED				
2CCP-V586	WCS Brg, Seal Cooler Outlet Hdr. Drain	SHUT AND CAPPED				
2CCP*V148	Check Valve Downstream Of MOV-14B	INSTALLED				
2CCP*V206	SFC Hx 1B Inlet Line Test Conn	SHUT AND CAPPED				
2CCP*V208	SFC Hx 1B Outlet Line Test Conn	SHUT AND CAPPED				
2CCP*RV64B	SFC Hx 1B Relief	NOT GAGGED				
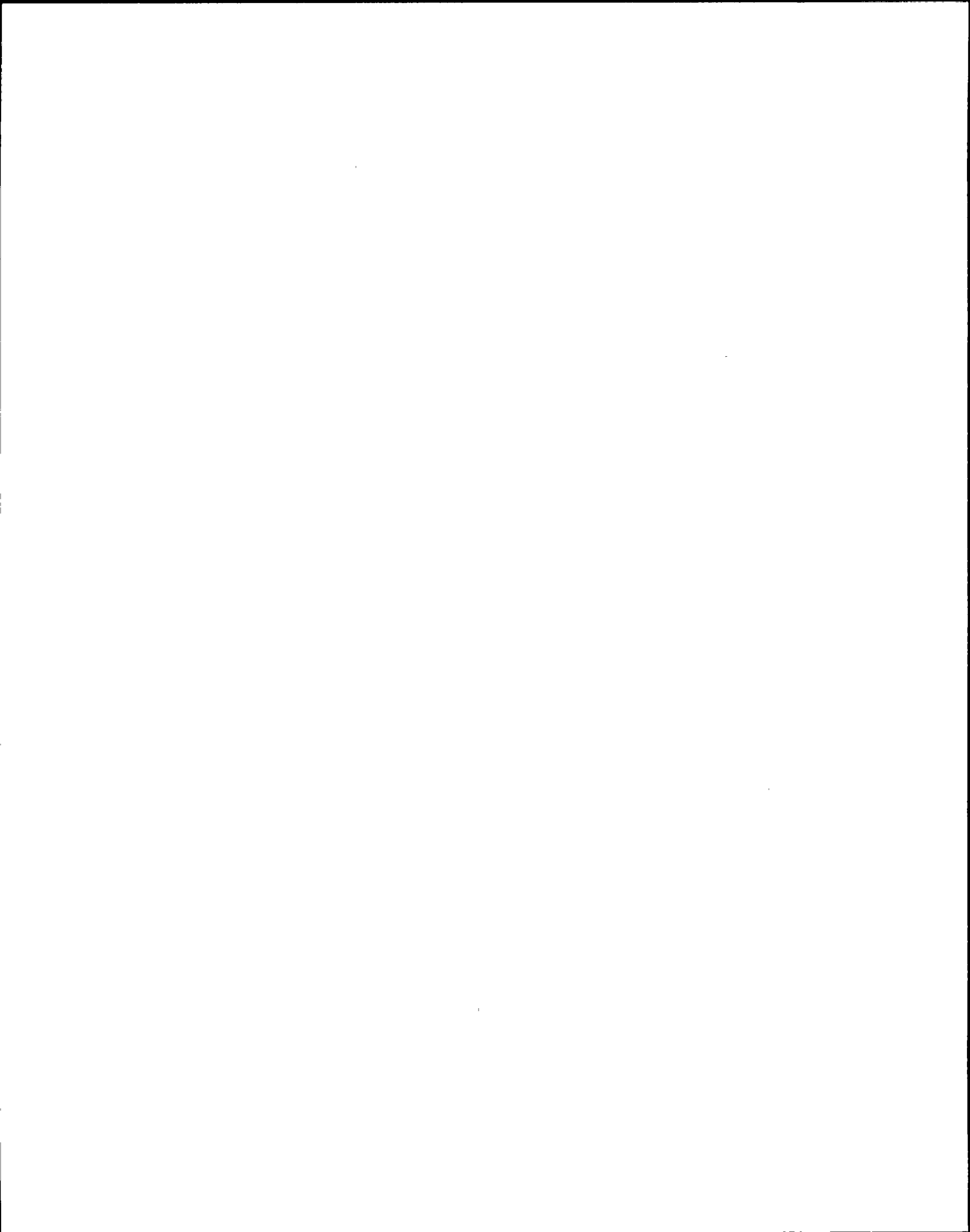
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP* V272	SFC Hx 1B Outlet Isol	OPEN			2 to 3 TURNS OPEN FROM FULL SHUT |TCN-32
2CCP- V209	SFC Hx 1B Outlet Line Sample Conn	SHUT AND CAPPED			
	RX BLDG. ELEV. 196'				
2CCP- RV35A	CCP Hx 1A Relief	NOT GAGGED			
2CCP- V249	CCP Hx 1A Inlet Line Test Conn	SHUT AND CAPPED			
2CCP- V263	CCP Hx 1A Shellside Vent	SHUT AND CAPPED			
2CCP- V175	TV108 Byp Inlet Isol	OPEN			
2CCP- RV35B	CCP Hx 1B Relief	NOT GAGGED			
2CCP- V250	CCP Hx 1B Inlet Line Test Conn	SHUT AND CAPPED			
2CCP- V262	CCP Hx 1B Shellside Vent	SHUT AND CAPPED			
2CCP- RV35C	CCP Hx 1C Relief	NOT GAGGED			
2CCP- V251	CCP Hx 1C Inlet Line Test Conn	SHUT AND CAPPED			
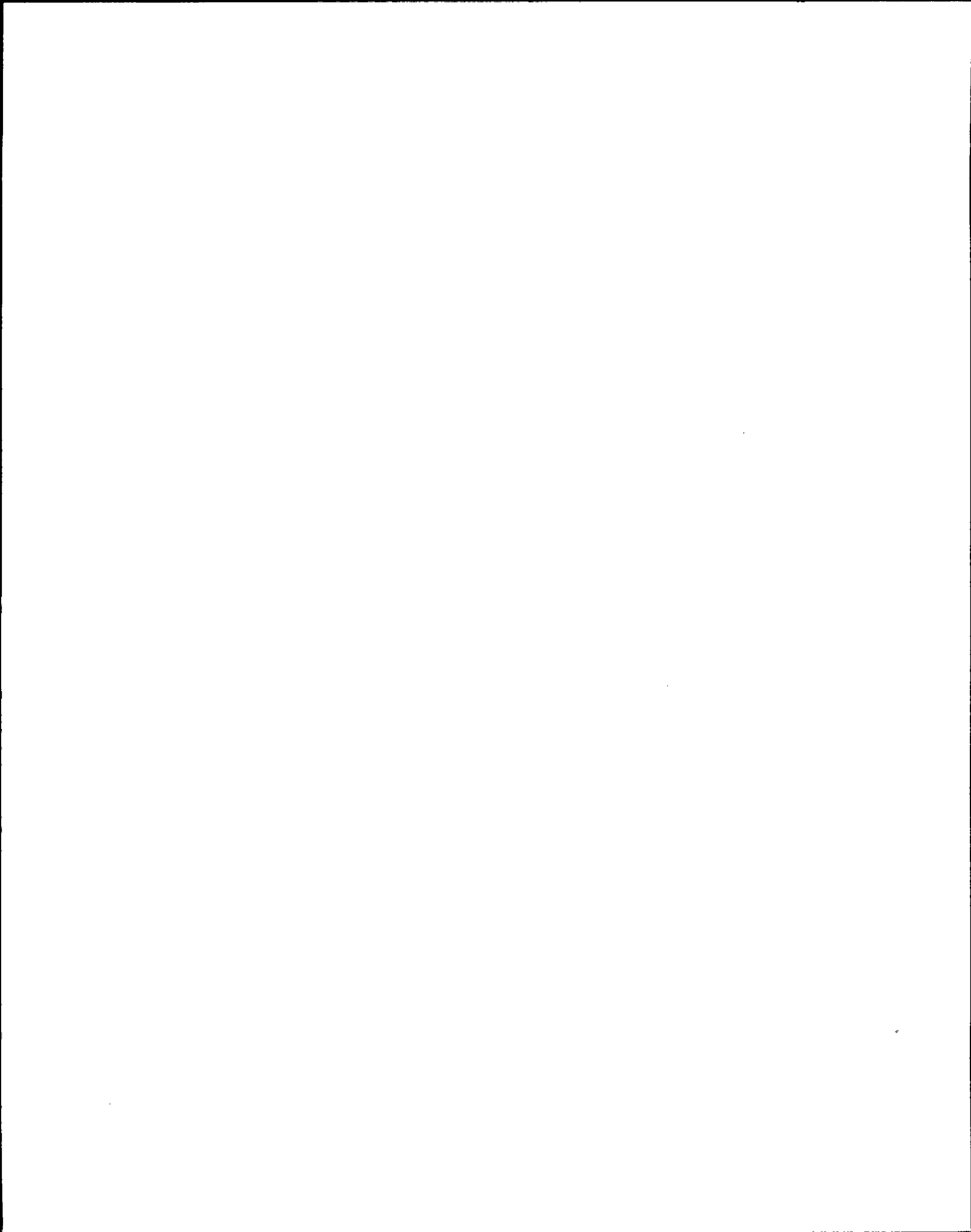
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V261	CCP Hx 1C Shellside Vent	SHUT AND CAPPED			
2CCP-V786	CCP Booster P3A Suction Isolation	OPEN			
2CCP-V792	Strnr 1D Test Conn	SHUT AND CAPPED			
2CCP-V793	Strnr 1D Test Conn	SHUT AND CAPPED			
2CCP-V819	Strnr 1D Drain Conn	SHUT			
2CCP-V794	PI45A, PS45A Instrument Root Isol	OPEN			
2CCP-V813	CCP P3A Suction Line Drain	SHUT			
2CCP-V795	CCP P3A Vent	SHUT AND CAPPED			
2CCP-V814	CCP P3A Drain	SHUT			
2CCP-V796	PI46A Instrument Root Isol	OPEN			
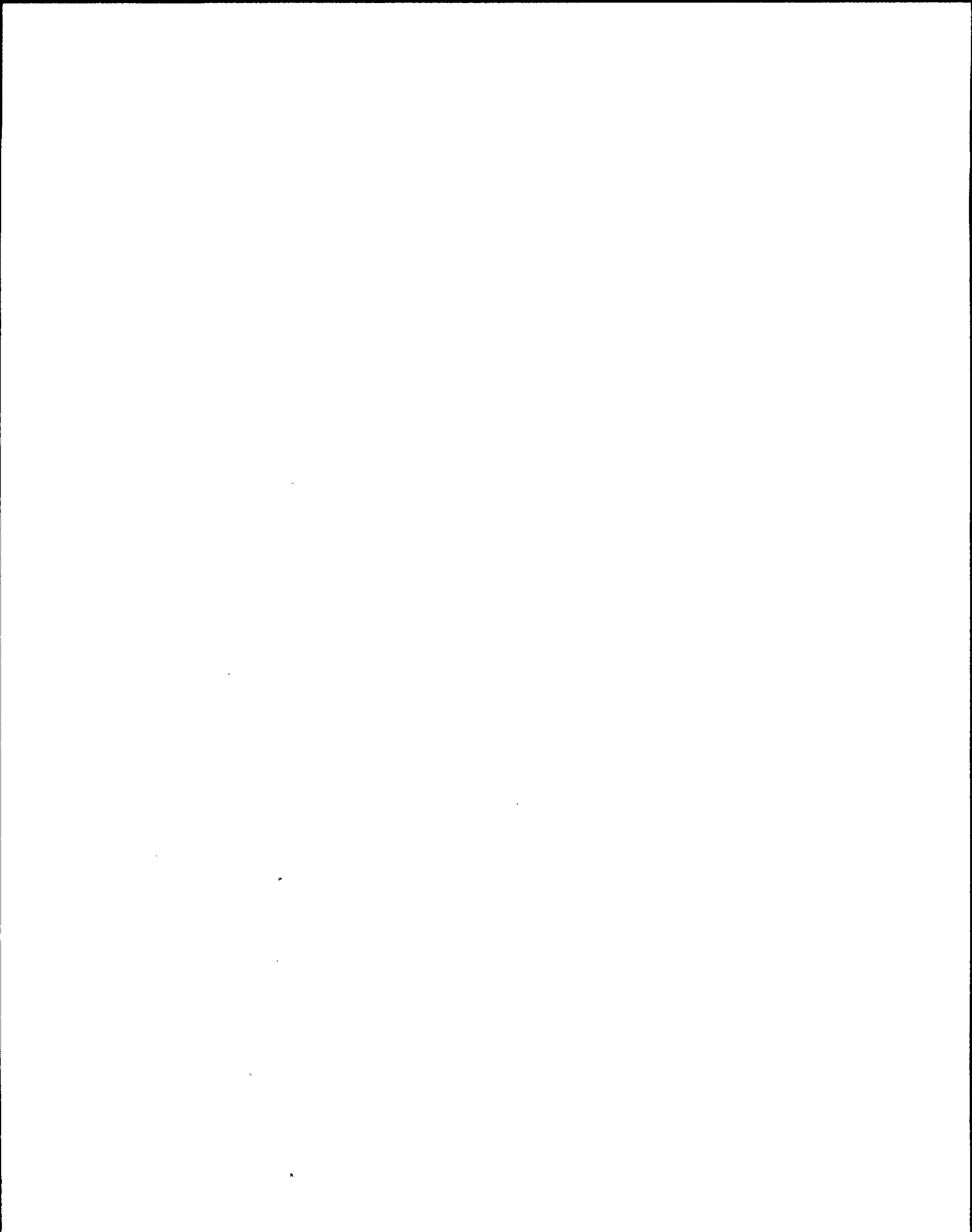
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V789	P3A Disch Stop Check	OPEN			
2CCP-V787	CCP Booster P3B Suction Isolation	OPEN			
2CCP-V797	Strnr 1E Test Conn	SHUT AND CAPPED			
2CCP-V798	Strnr 1E Test Conn	SHUT AND CAPPED			
2CCP-V820	Strnr 1E Drain Conn	SHUT AND CAPPED			
2CCP-V799	PI45B, PS45B Instrument Root Isol	OPEN			
2CCP-V815	CCP P3B Suction Line Drain	SHUT			
2CCP-V816	CCP P3B Drain	SHUT			
2CCP-V800	CCP P3B Vent	SHUT AND CAPPED			
2CCP-V801	PI46B Instrument Root Isol	OPEN			
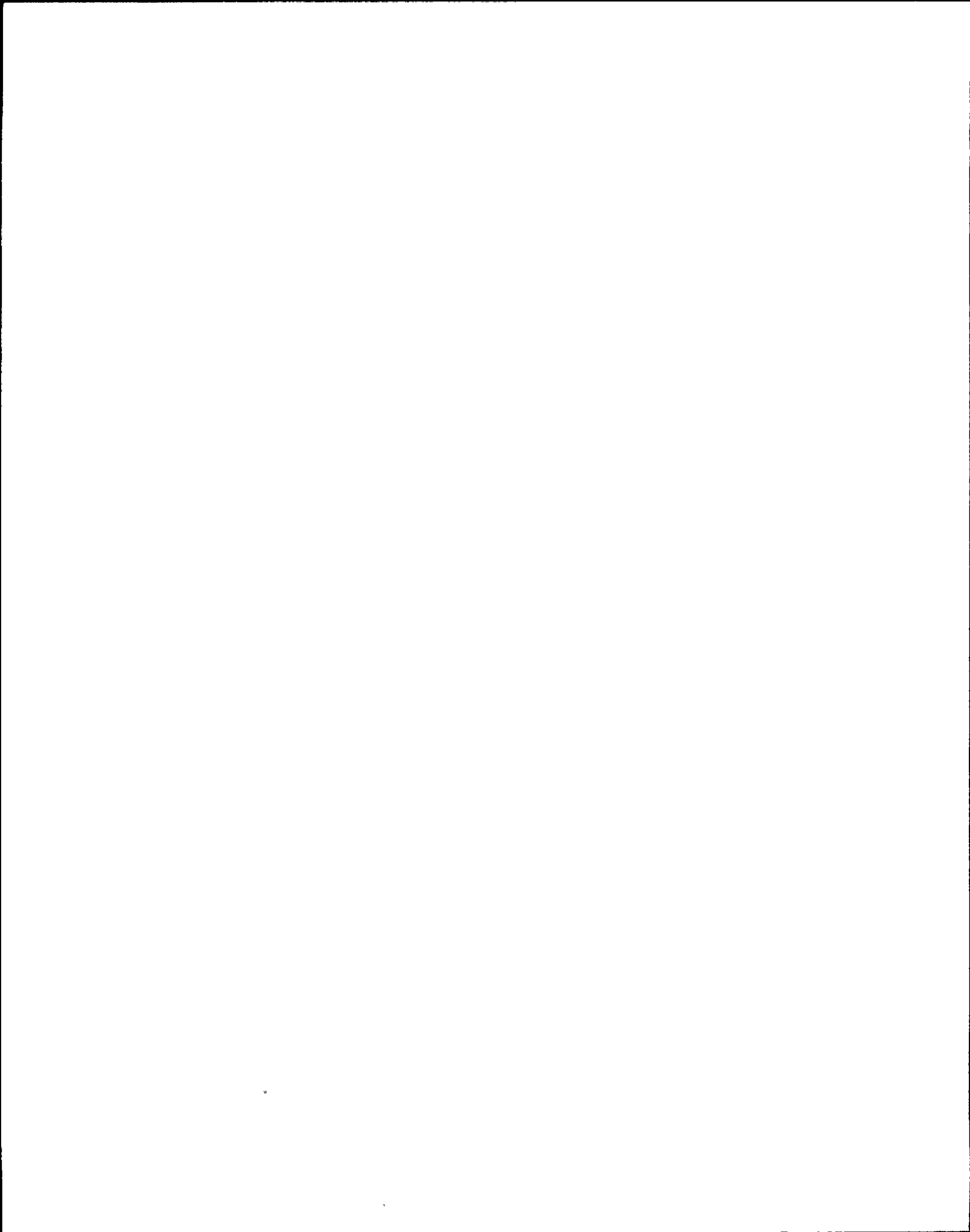
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V790	P3B Disch Stop Check	OPEN			
2CCP-V788	CCP Booster P3C Suction Valve	OPEN			
2CCP-V802	Strnr 1F Test Conn	SHUT AND CAPPED			
2CCP-V803	Strnr 1F Test Conn	SHUT AND CAPPED			
2CCP-V821	Strnr 1F Drain Conn	SHUT AND CAPPED			
2CCP-V804	PI45C, PS45C Instrument Root Isol	OPEN			
2CCP-V817	CCP P3C Suction Line Drain	SHUT			
2CCP-V818	CCP P3C Drain	SHUT			
2CCP-V805	CCP P3C Vent	SHUT AND CAPPED			
2CCP-V806	PI46C Instrument Root Isol	OPEN			
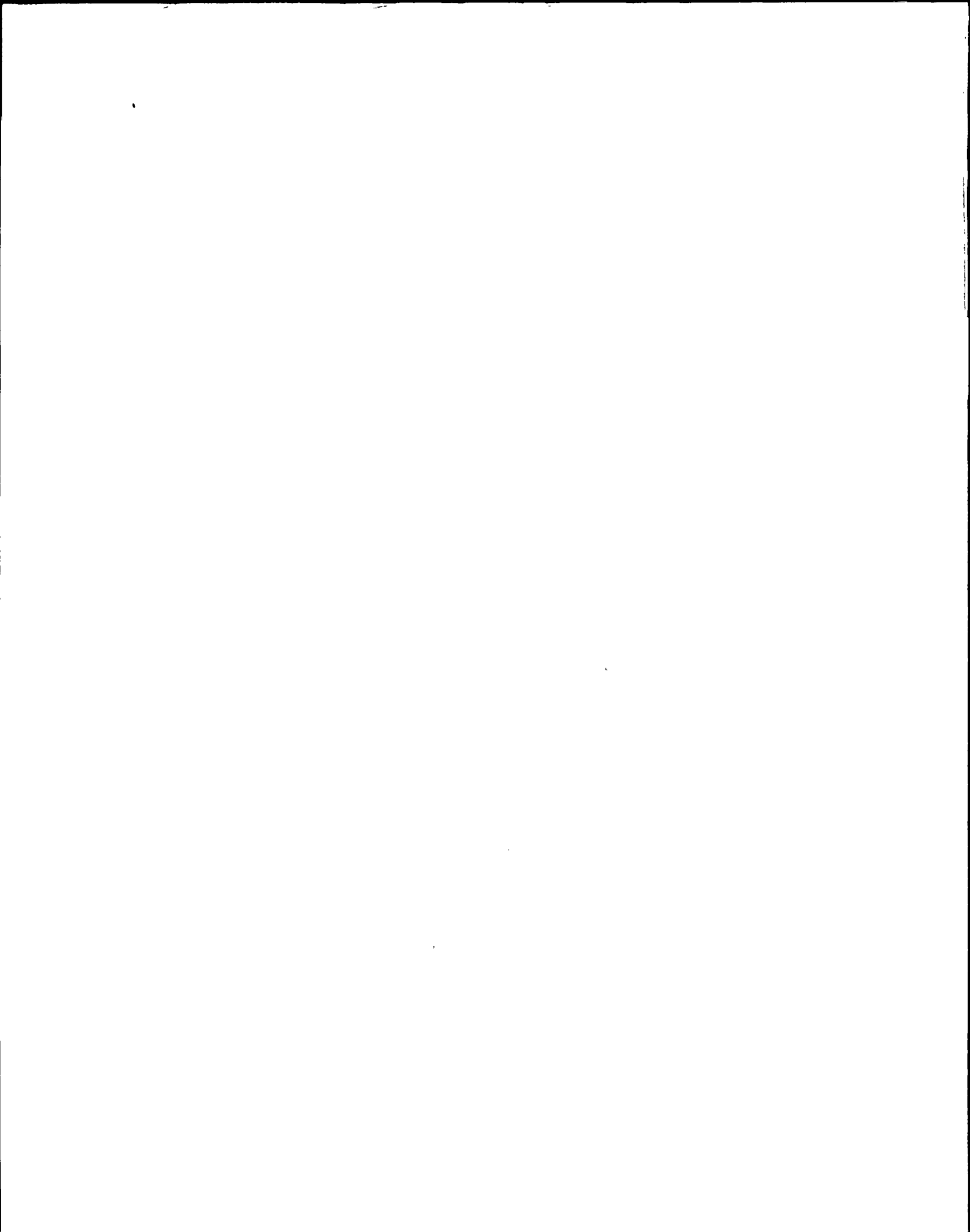
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V791	P3C Disch Stop Check	OPEN			
2CCP-V809	PI47C, PS47C Instrument Root Isol	OPEN			
2CCP-V810	PI47B, PS47B Instrument Root Isol	OPEN			
2CCP-V811	PI47A, PS47A Instrument Root Isol	OPEN			
2CCP-V812	PT107 Instrument Root Isol	OPEN			
2CCP-V807	FT105 Instrument Root Isol	OPEN			
2CCP-V808	FT105 Instrument Root Isol	OPEN			
2CCP-V985	FT105 Instrument Root Isol	OPEN			

RX BLDG. ELEV. 175'

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V264	CCP Hx A Drain	SHUT AND CAPPED			
2CCP-V265	CCP Hx B Drain	SHUT AND CAPPED			
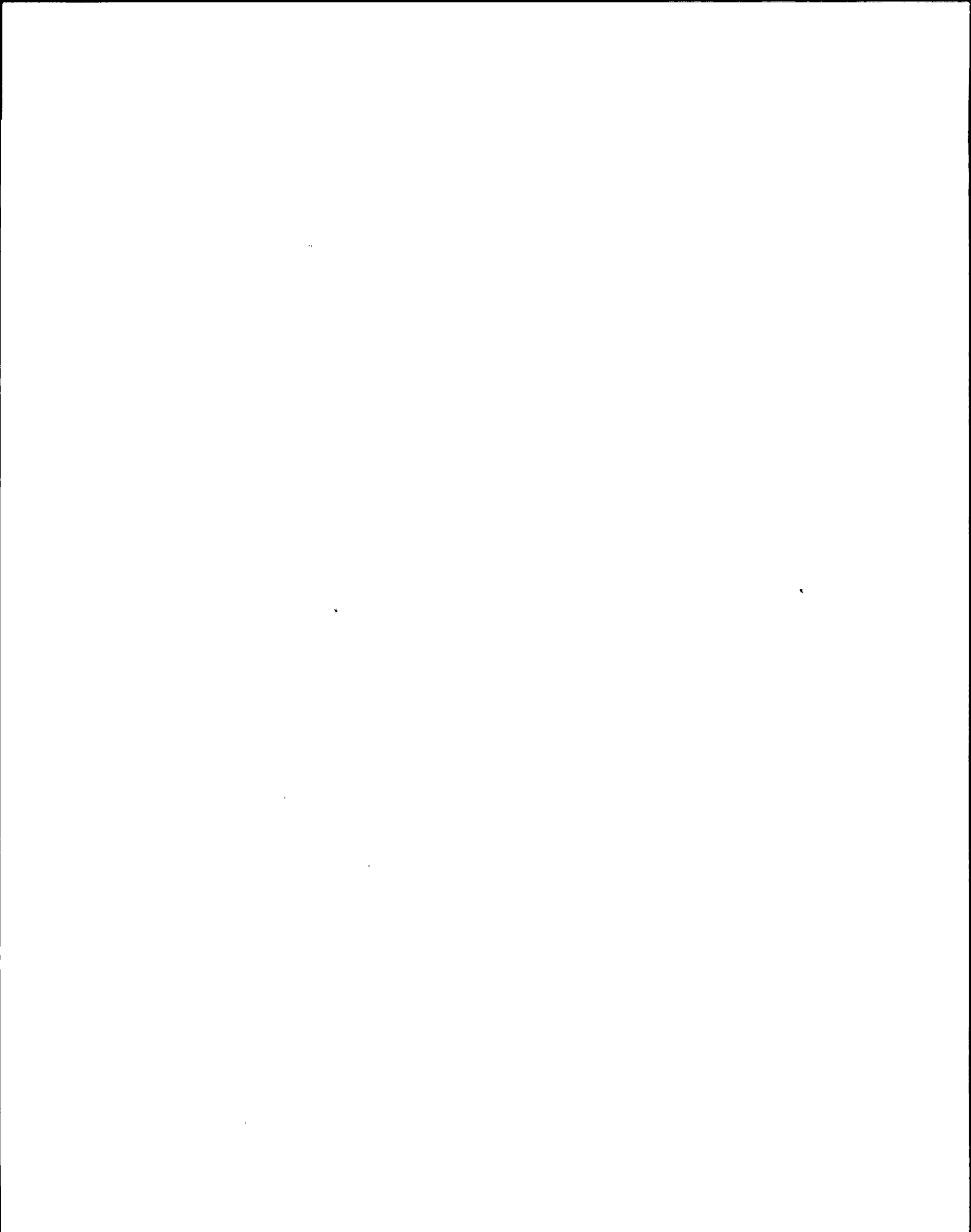
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V266	CCP Hx C Drain	SHUT AND CAPPED			
2CCP-V169	CCP HX "A" Outlet Isolation	OPEN*			
2CCP-V170	CCP HX "B" Outlet Isolation	OPEN*			
2CCP-V171	CCP HX "C" Outlet Isolation	OPEN*			
2CCP-V252	CCP Hx A Outlet Test Conn	SHUT AND CAPPED			
2CCP-V253	CCP Hx B Outlet Test Conn	SHUT AND CAPPED			
2CCP-V254	CCP Hx C Outlet Test Conn	SHUT AND CAPPED			
2CCP-V91	Dnstr Drain For AOV37A	SHUT AND CAPPED			
2CCP* V277	Dnstr Check For AOV38A	INSTALLED			
2CCP-V233	PI76A, PS76A Inst Root Isolation	OPEN			

*Two Heat Exchangers are normally in service with the standby Heat Exchanger Outlet Isol shut.
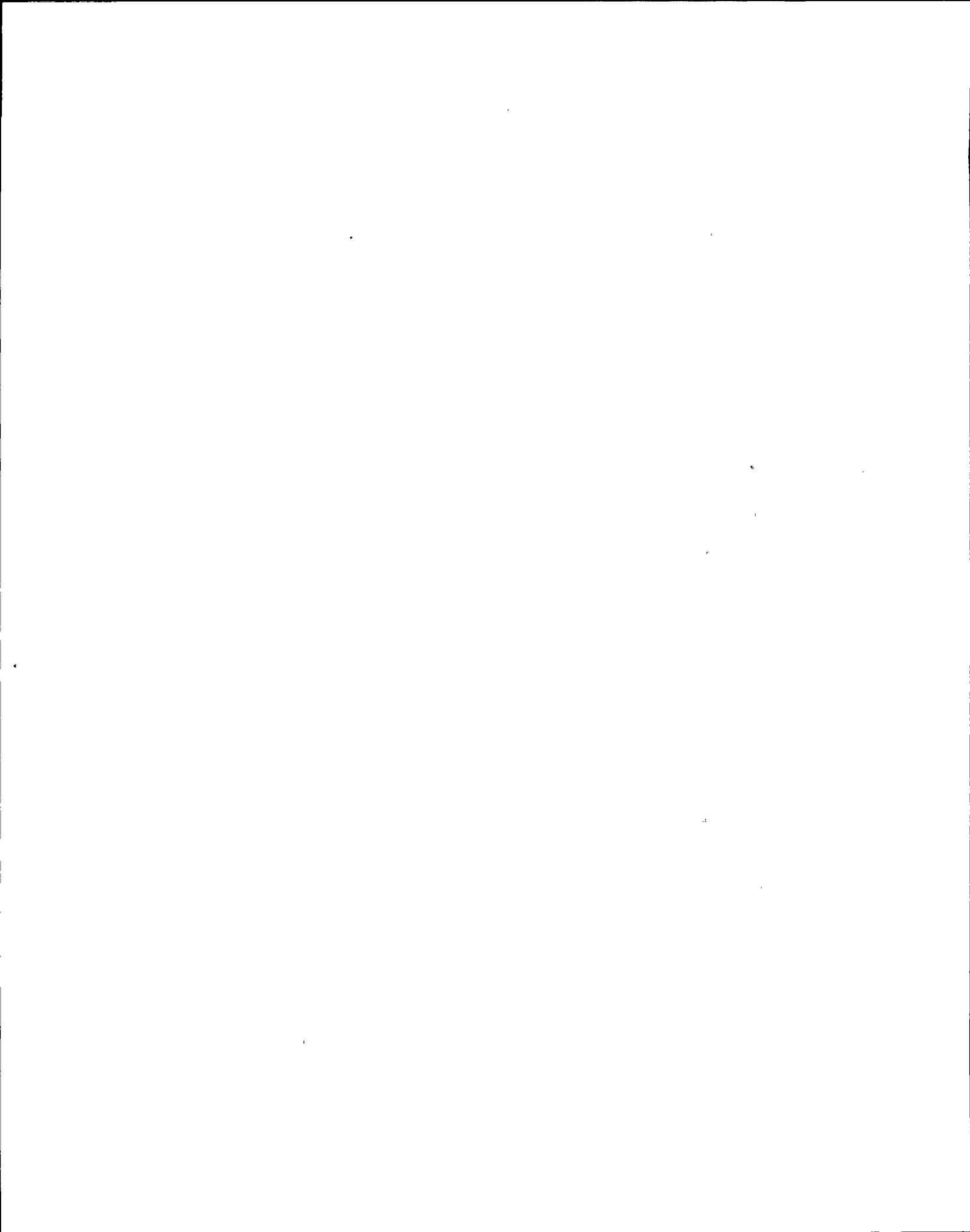
VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V961	Outlet From RHS Seal Cooler	OPEN			
2CCP-V960	Inlet To RHS Seal Cooler	OPEN			
2CCP* V159	Seal Cooler For RHS P1A Outlet Isol	THROTTLED			45° OPEN FROM FULL SHUT
2CCP* V87	Seal Cooler For RHS P1A Outlet Vent	SHUT AND CAPPED			
2CCP* V157	Seal Cooler For RHS P1A Inlet Isol	OPEN			
2CCP* V85	Seal Cooler For RHS P1A Inlet Vent	SHUT AND CAPPED			
2CCP* RV60A	Seal Cooler HX Relief	NOT GAGGED			
2CCP-V901	Sample Clr 3A Inlet Vent	SHUT AND CAPPED			
2CCP-V903	Sample Clr 3A Outlet Vent	SHUT AND CAPPED			
2CCP-V906	Sample Clr 3A Inlet Drain	SHUT AND CAPPED			
2CCP-V837	Sample Clr 3A Outlet Isol	THROTTLED			3rd SLOT FROM SHUT
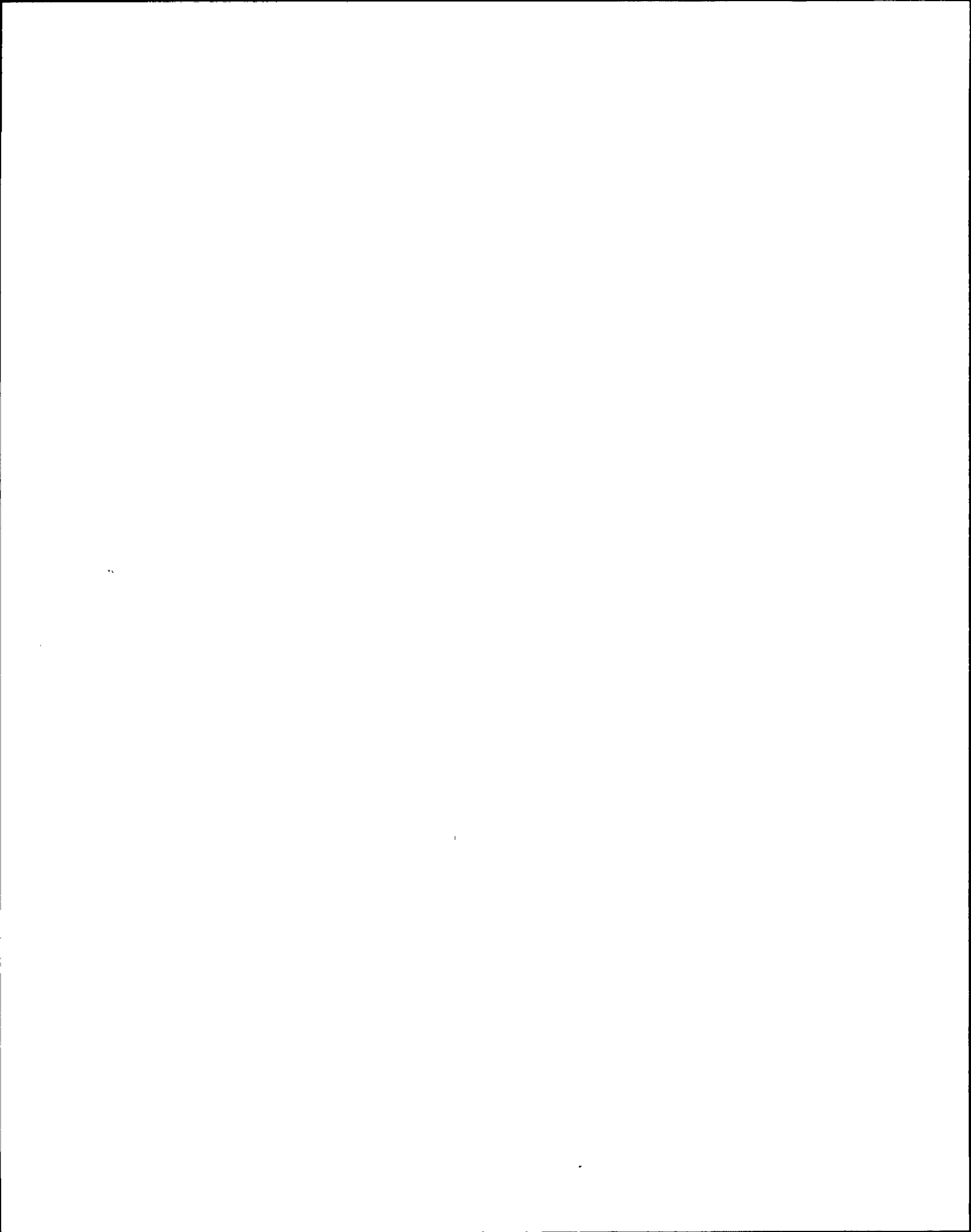
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V686	Sample Clr 3A Outlet Test Conn	SHUT AND CAPPED			
2CCP-RV36A	Sample Clr 3A Relief	NOT GAGGED			
2CCP-V687	Sample Clr 3A Inlet Test Conn	SHUT AND CAPPED			
2CCP-V840	Sample Clr 3A Inlet Isol	OPEN			
2CCP-V142	DER Cooler 2B Outlet Isol	THROTTLED			25% OPEN
2CCP-V284	DER Cooler 2B Sample Conn	SHUT AND CAPPED			
2CCP-V504	DER Cooler 2B Test Conn	SHUT AND CAPPED			
2CCP-RV141	DER Cooler 2B Relief	NOT GAGGED			
2CCP-V591	DER Cooler 2B Outlet Vent	SHUT AND CAPPED			
2CCP-V505	DER Cooler 2B Inlet Test Conn	SHUT AND CAPPED			
2CCP-V590	DER Cooler 2B Inlet Drain	SHUT AND CAPPED			
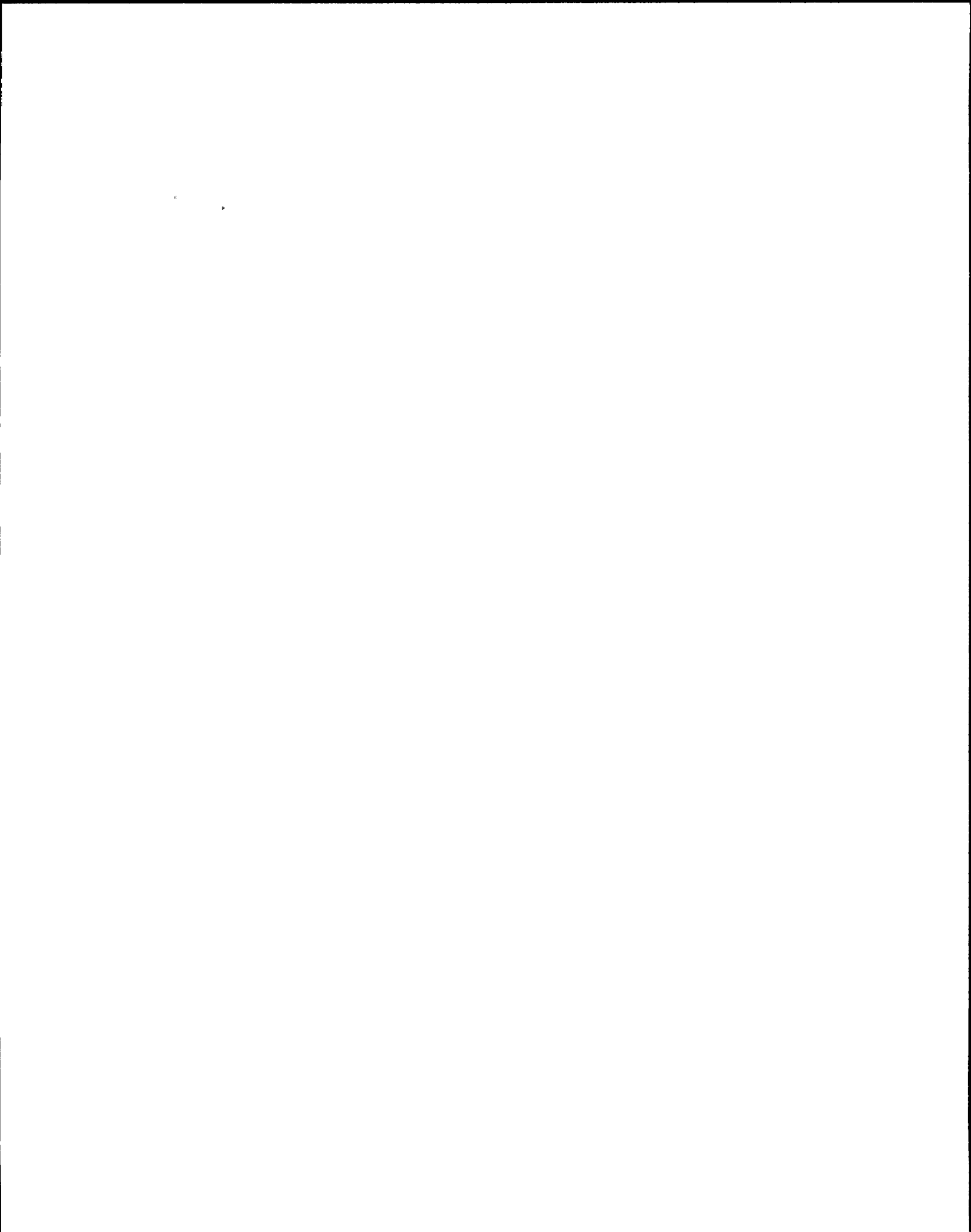
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V141	DER Cooler 2B Inlet Isol	OPEN			
2CCP-V841	Sample Clr 3B Inlet Isol	OPEN			
2CCP-V683	Sample Clr 3B Test Conn	SHUT AND CAPPED			
2CCP-V838	Sample Clr 3B Outlet Isol	THROTTLED			25° OPEN FROM FULL SHUT
2CCP-V682	Sample Clr 3B Test Conn	SHUT AND CAPPED			
2CCP-RV36B	Sample Clr 3B Relief	NOT GAGGED			
2CCP-V318	Upstr Vent For AOV38B	SHUT AND CAPPED			
2CCP-V930	Upstr Vent For AOV38B	SHUT AND CAPPED			
2CCP-V958	Seal Cooler Inlet Isol	OPEN			
2CCP-V902	Dnstr Vent For AOV38B	SHUT AND CAPPED			
2CCP-V936	RHS Sample Cooler 1B Disch Line Vent	SHUT AND CAPPED			
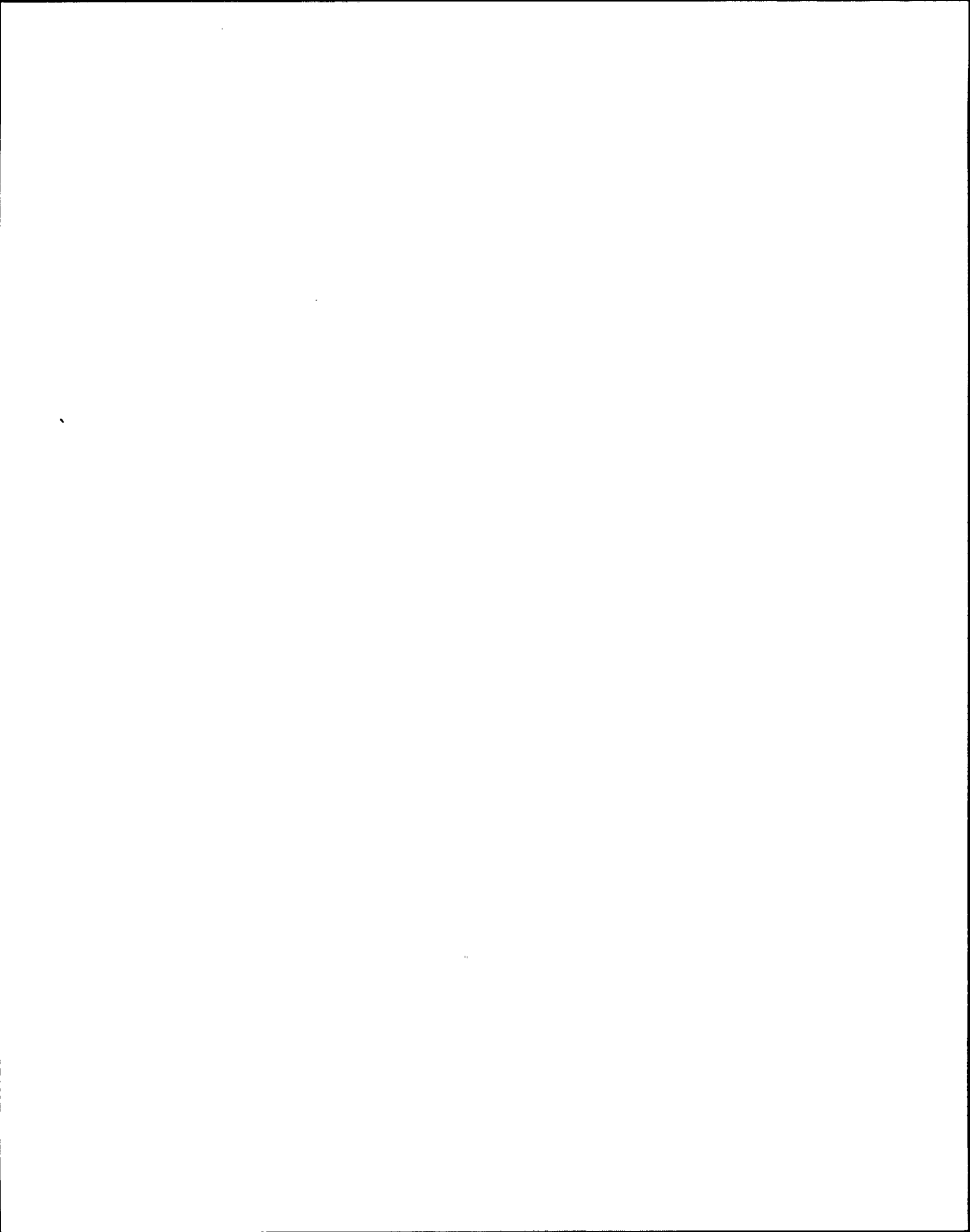
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VALUE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP* V143	Dnstr Check For AOV38B	INSTALLED			
2CCP* V113	Dnstr Drain For V143	SHUT AND CAPPED			
2CCP* V146	RHS P1B Seal Cooler Outlet Isol	THROTTLED			45° OPEN FROM FULL SHUT
2CCP* V115	RHS Seal Clr Disch Hdr Drain	SHUT AND CAPPED			
2CCP- V959	RHS Seal Clr Disch Hdr Isol	OPEN			
2CCP* V205	PS76B, PI76B Inst Root Isolation	OPEN			
2CCP* V935	RHS P1B Seal Cooler Inlet Line Vent	SHUT AND CAPPED			
2CCP* V921	RHS P1B Seal Cooler Inlet Line Drain	SHUT AND CAPPED			
2CCP* V920	RHS P1B Seal Cooler Inlet Line Vent	SHUT AND CAPPED			
2CCP* V144	RHS P1B Seal Cooler Inlet Isol	OPEN			
2CCP* V937	RHS P1B Seal Cooler Outlet Line Vent	SHUT AND CAPPED			
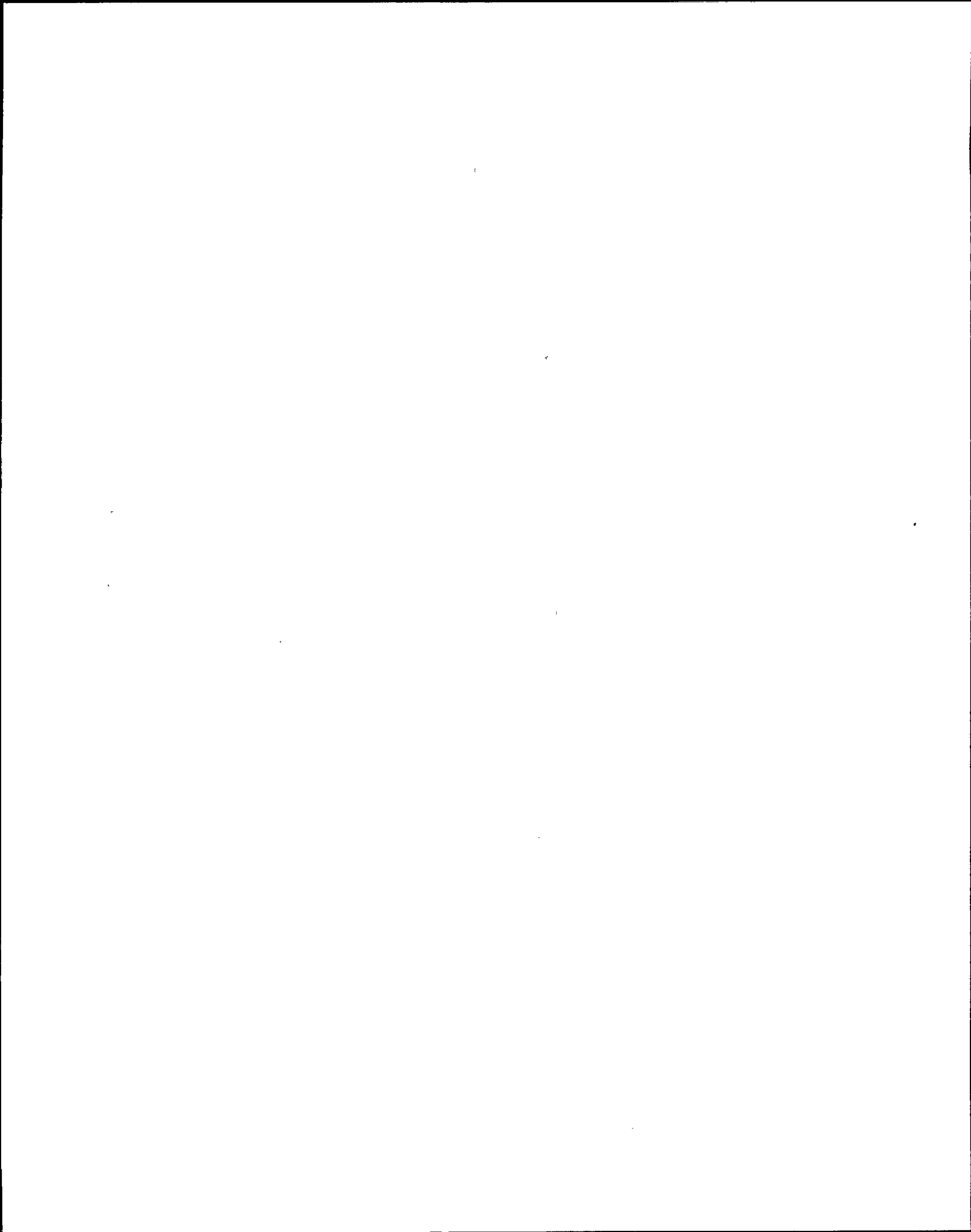
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP* RV60B	RHS P1B Seal Cooler Relief	NOT GAGGED			
2CCP* V147	RHS P1C Seal Cooler Outlet Isol	THROTTLED			45° OPEN FROM FULL SHUT
2CCP* RV60C	RHS P1C Seal Cooler Relief	NOT GAGGED			
2CCP* V145	RHS P1C Seal Cooler Inlet Isol	OPEN			
2CCP* V918	RHS P1C Seal Cooler Inlet Line Vent	SHUT AND CAPPED			
2CCP* V919	RHS P1C Seal Cooler Outlet Line Vent	SHUT AND CAPPED			
2CCP- V155	Drywell Equip Drain Cooler E1 Inlet Isol	OPEN			
2CCP- RV111	Drywell Equip Drain Cooler E1 Relief	NOT GAGGED			
2CCP- V588	DER Cooler E1 Inlet Line Drain	SHUT AND CAPPED			
2CCP- V427	DER Cooler E1 Inlet Line Test Connection	SHUT AND CAPPED			
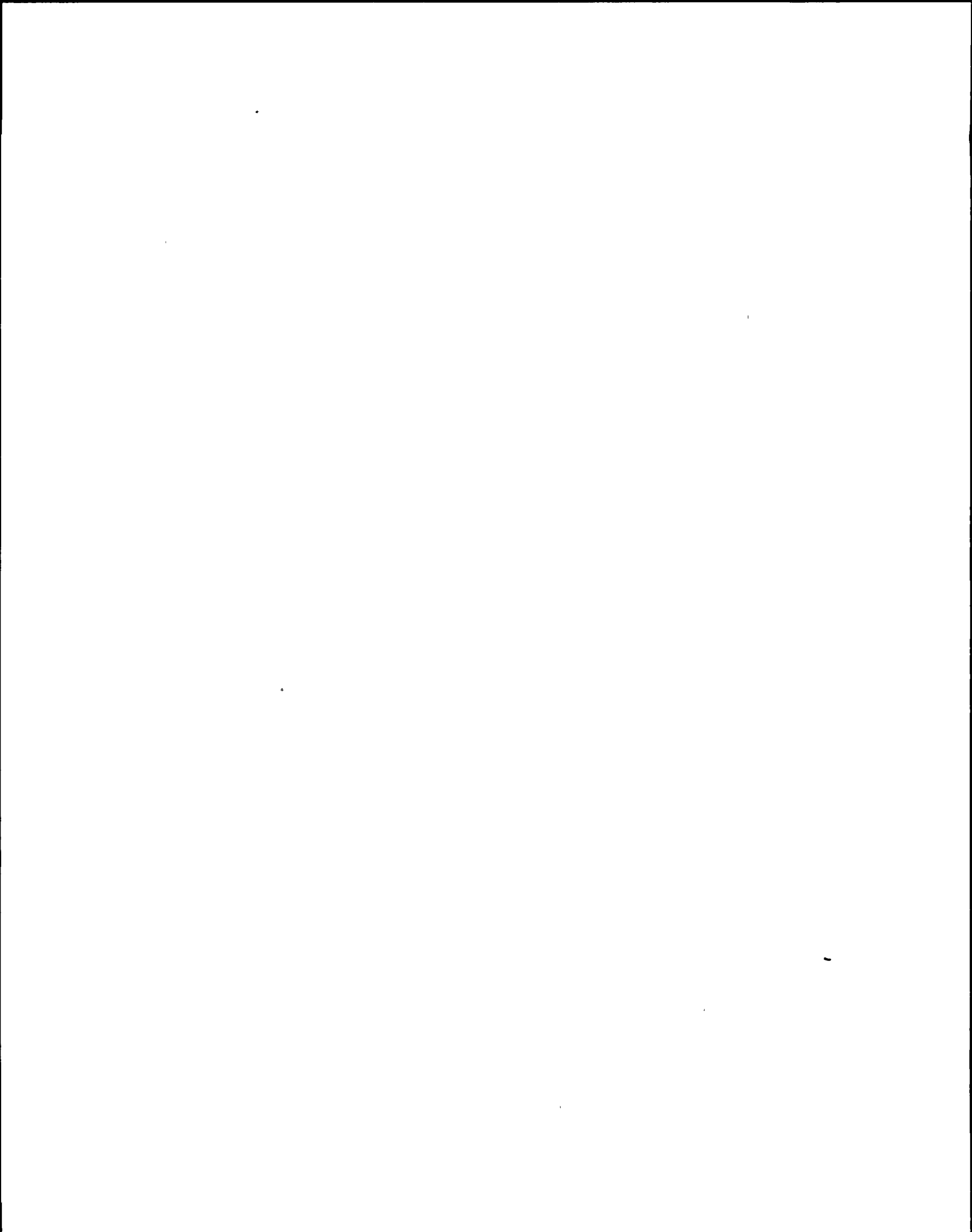
VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V352	DER Cooler E1 Outlet Test Conn	SHUT AND CAPPED			
2CCP-V222	DER Cooler E1 Outlet Sample Conn	SHUT AND CAPPED			
2CCP-V156	Drywell Equip Drain Cooler E1 Outlet Isol	THROTTLED			25% OPEN
2CCP-V589	DER Cooler E1 Outlet Line Vent	SHUT AND CAPPED			
2CCP-V330	CCP Return Hdr Drain	SHUT AND CAPPED			
2CCP-V475	CCP Supply Hdr Drain	SHUT AND CAPPED			
2CCP-V329	CCP Return Hdr Vent	SHUT AND CAPPED			
2CCP-V476	CCP Supply Hdr Vent	SHUT AND CAPPED			
2CCP-V149	Rx Bldg Equip Drain Cooler E2A Inlet Isol	OPEN			
2CCP-V273	DER Cooler 2A Inlet Test Conn	SHUT AND CAPPED			
2CCP-V592	DER Cooler 2A Inlet Drain	SHUT AND CAPPED			
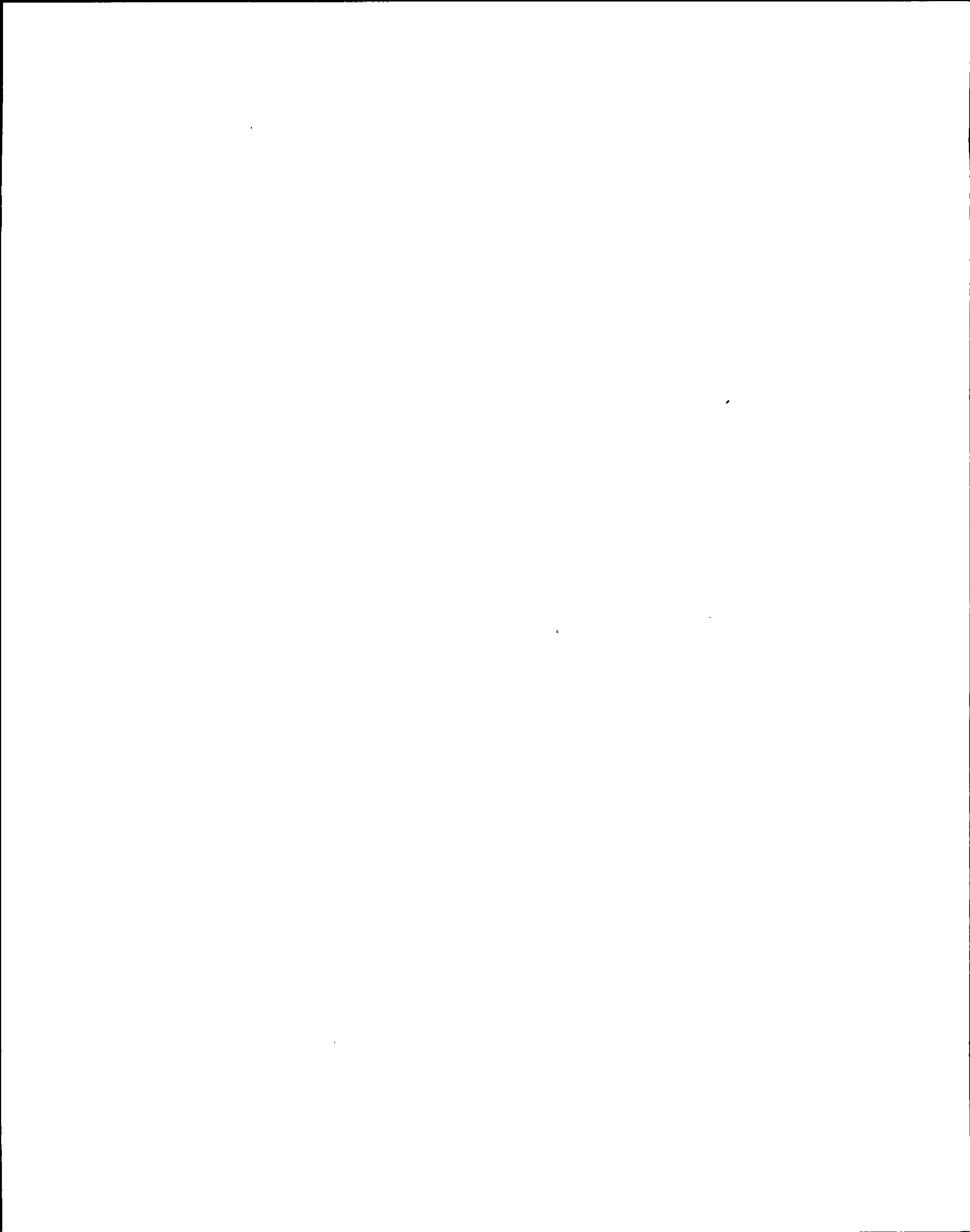
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V593	DER Cooler 2A Outlet Vent	SHUT AND CAPPED			
2CCP-V219	DER Cooler 2A Outlet Sample Conn	SHUT AND CAPPED			
2CCP-V274	DER Cooler 2A Outlet Test Conn	SHUT AND CAPPED			
2CCP-V150	Rx Bldg Equip Drain Cooler 2A Outlet Isol	THROTTLED			25% OPEN
2CCP-RV269	DER Cooler 2A Relief	NOT GAGGED			

DRYWELL 261'

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V743	RCS 1A Winding Clr RCS-E5C Inlet Isol	OPEN			
2CCP-V755	RCS-E5C Inlet Line Drain	SHUT			
2CCP-V756	RCS-E5C Inlet Line Drain	SHUT AND CAPPED			
2CCP-RV82C	2RCS-E5C Relief	NOT GAGGED			
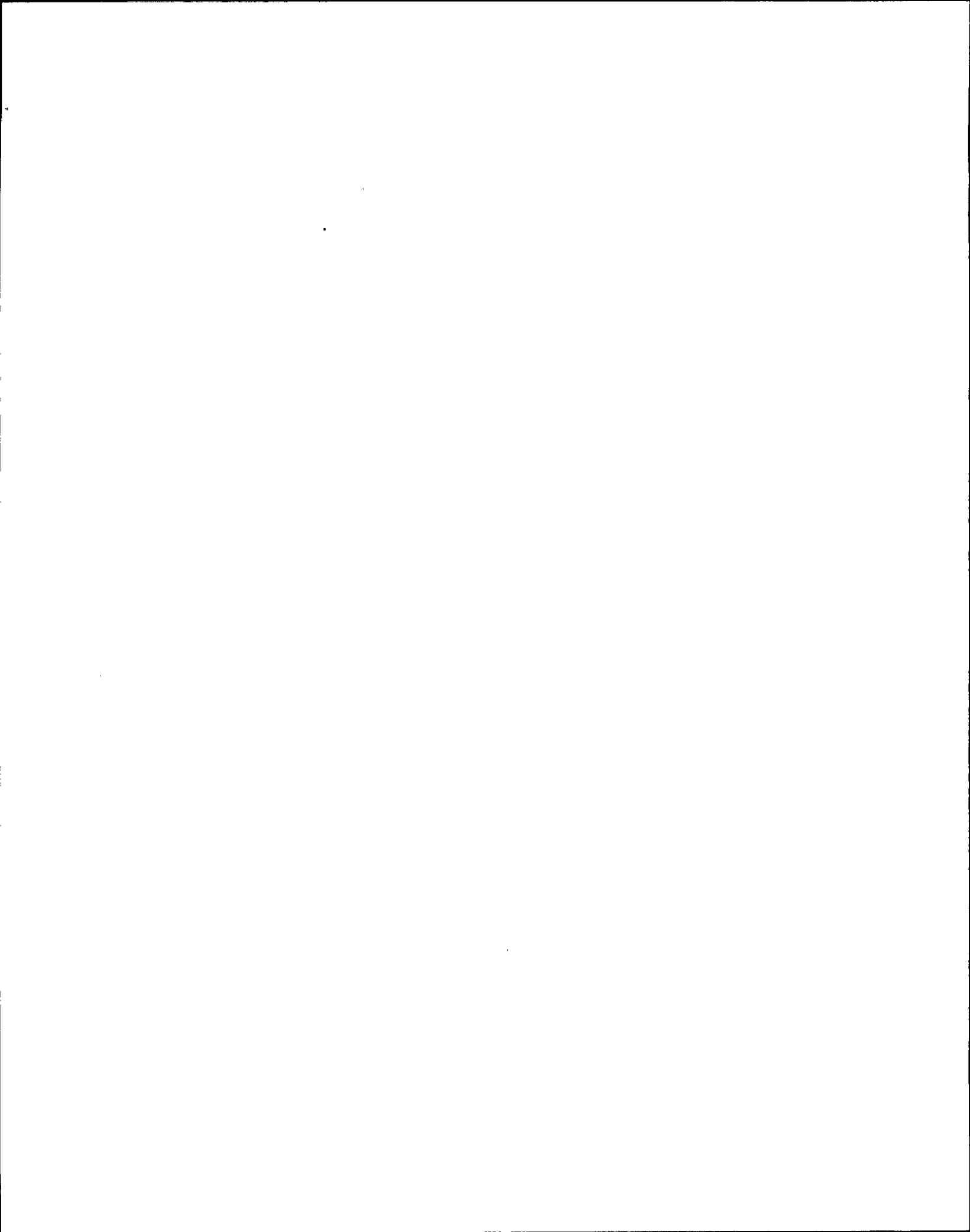
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V771	RCS-E5C Outlet Line Line Vent	SHUT AND CAPPED			
2CCP-V772	RCS-E5C Outlet Line Vent	SHUT			
2CCP-V827	RCS 1A Winding Clr 2RCS-E5C Outlet Isol.	THROTTLED			THREE TURNS OPEN FROM FULL SHUT
2CCP-V744	RCS 1A Winding Clr 2RCS-E5A Inlet Isol.	OPEN			
2CCP-V757	RCS-E5A Inlet Line Drain	SHUT			
2CCP-V758	RCS-E5A Inlet Line Drain	SHUT AND CAPPED			
2CCP-RV82A	2RCS-E5A Relief	NOT GAGGED			
2CCP-V773	RCS-E5A Outlet Line Vent	SHUT AND CAPPED			
2CCP-V774	RCS-E5A Outlet Line Vent	SHUT			
2CCP-V828	RCS 1A Winding Cir 2RCS-E5A Outlet Isol.	THROTTLED			2 1/4 TURNS FROM FULL OPEN
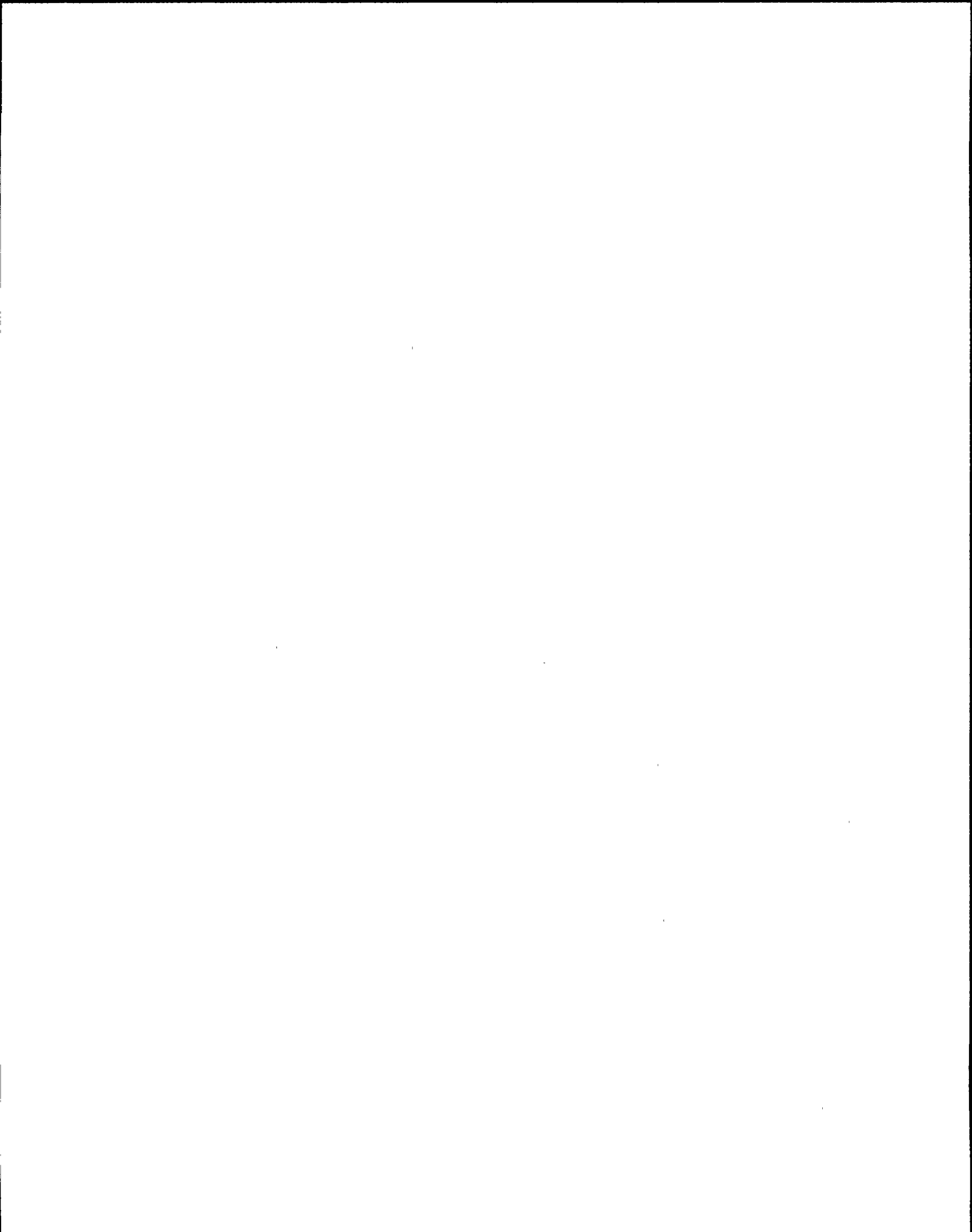
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V745	RCS 1A Mtr Brg Cooler RCS-E2A Inlet Isol.	OPEN			
2CCP-V759	RCS-E2A Inlet Line Drain	SHUT			
2CCP-V760	RCS-E2A Inlet Line Drain	SHUT AND CAPPED			
2CCP-RV83A	2RCS-E2A Relief	NOT GAGGED			
2CCP-V775	RCS-E2A Outlet Line Vent	SHUT AND CAPPED			
2CCP-V776	RCS-E2A Outlet Line Vent	SHUT			
2CCP-V829	RCS 1A Mtr Brg Cooler RCS-E2A Outlet Isol.	OPEN			
2CCP-V746	RCS 1A Mtr Brg Cooler RCS-E3A Inlet Isol.	OPEN			
2CCP-V761	RCS-E3A Inlet Line Drain	SHUT			
2CCP-V762	RCS-E3A Inlet Line Drain	SHUT AND CAPPED			
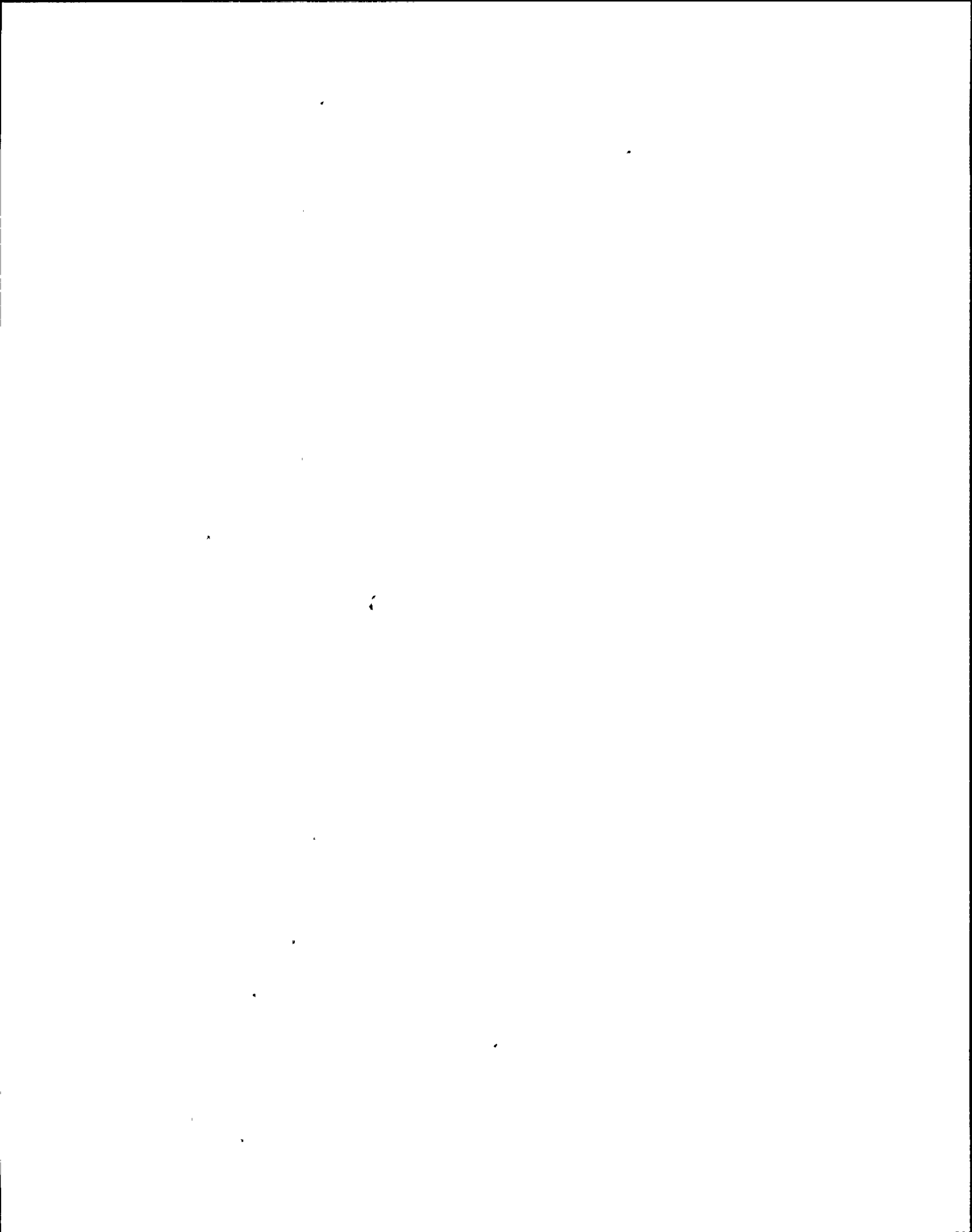
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-RV84A	2RCS-E3A Relief	NOT GAGGED			
2CCP-V777	RCS-E3A Outlet Line Vent	SHUT AND CAPPED			
2CCP-V778	RCS-E3A Outlet Line Vent	SHUT			
2CCP-V830	RCS 1A Mtr Brg Cooler RCS-E3A Outlet Isol.	OPEN			
2CCP-V747	RCS 1A Recirc Pump Seal Clr 4A Inlet Isol.	OPEN			
2CCP-V763	RCS-E4A Inlet Line Drain	SHUT			
2CCP-V764	RCS-E4A Inlet Line Drain	SHUT AND CAPPED			
2CCP-RV85A	2RCS-E4A Relief	NOT GAGGED			
2CCP-V779	RCS-E4A Outlet Line Vent	SHUT AND CAPPED			
2CCP-V780	RCS-E4A Outlet Line Vent	SHUT			
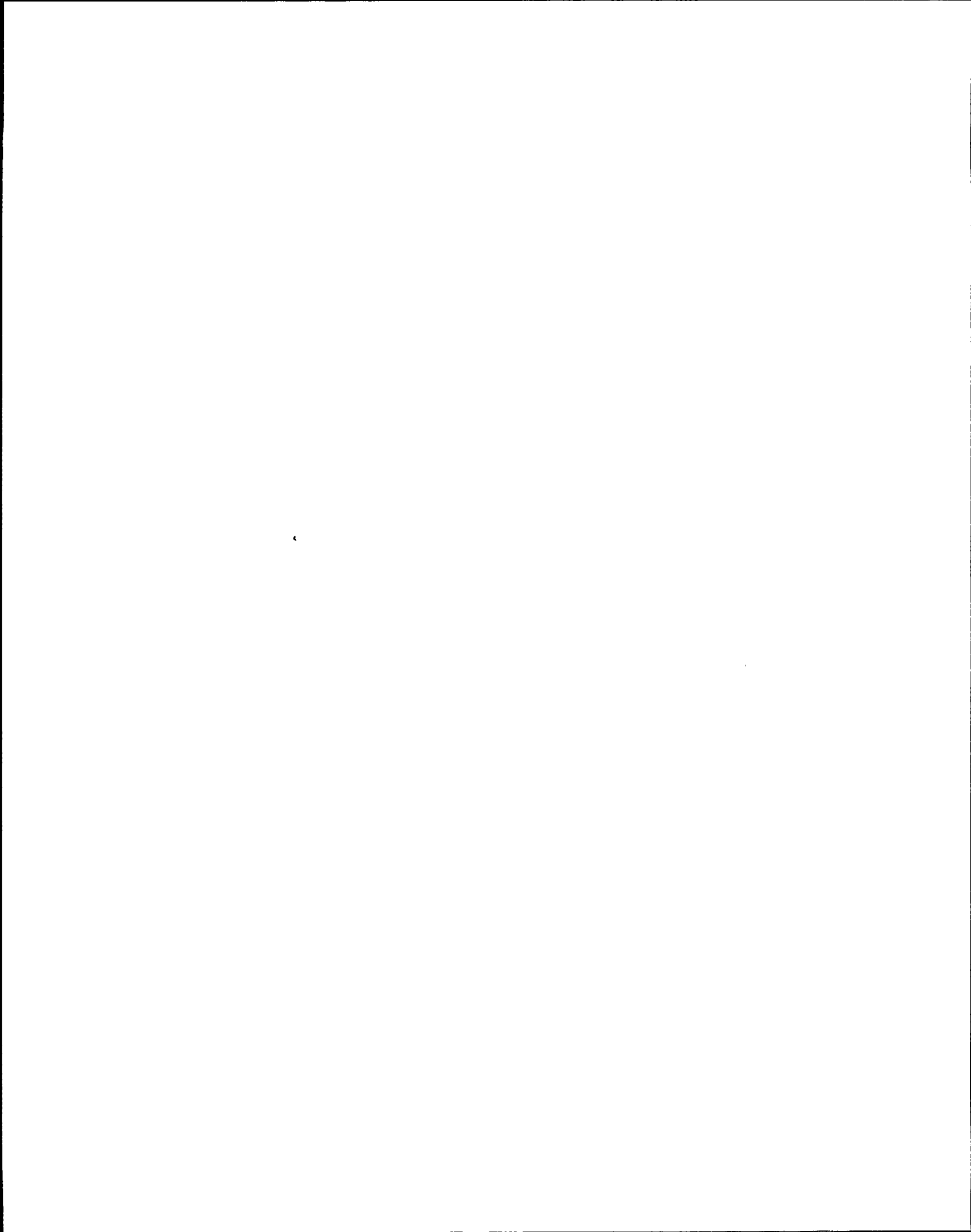
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V932	RCS-E4A Outlet Line Drain	SHUT			
2CCP-V931	RCS-E4A Outlet Line Drain	SHUT AND CAPPED			
2CCP-V831	RCS 1A Recirc Pump Seal Clr 4A Outlet Isol.	THROTTLED			45° OPEN FROM FULL SHUT
2CCP-V765	RCS-E4A Outlet Line Drain	SHUT			
2CCP-V766	RCS-E4A Outlet Line Drain	SHUT AND CAPPED			
2CCP-V781	RCS-E5A, E5C Outlet Hdr Vent	SHUT			
2CCP-V782	RCS-E5A, E5C Outlet Hdr Vent	SHUT AND CAPPED			
2CCP-V699	RCS 1B Recirc Pump Seal Circ 4B Inlet Isol.	OPEN			
2CCP-V725	RCS-E4B Drain	SHUT			
2CCP-V726	RCS-E4B Drain	SHUT AND CAPPED			
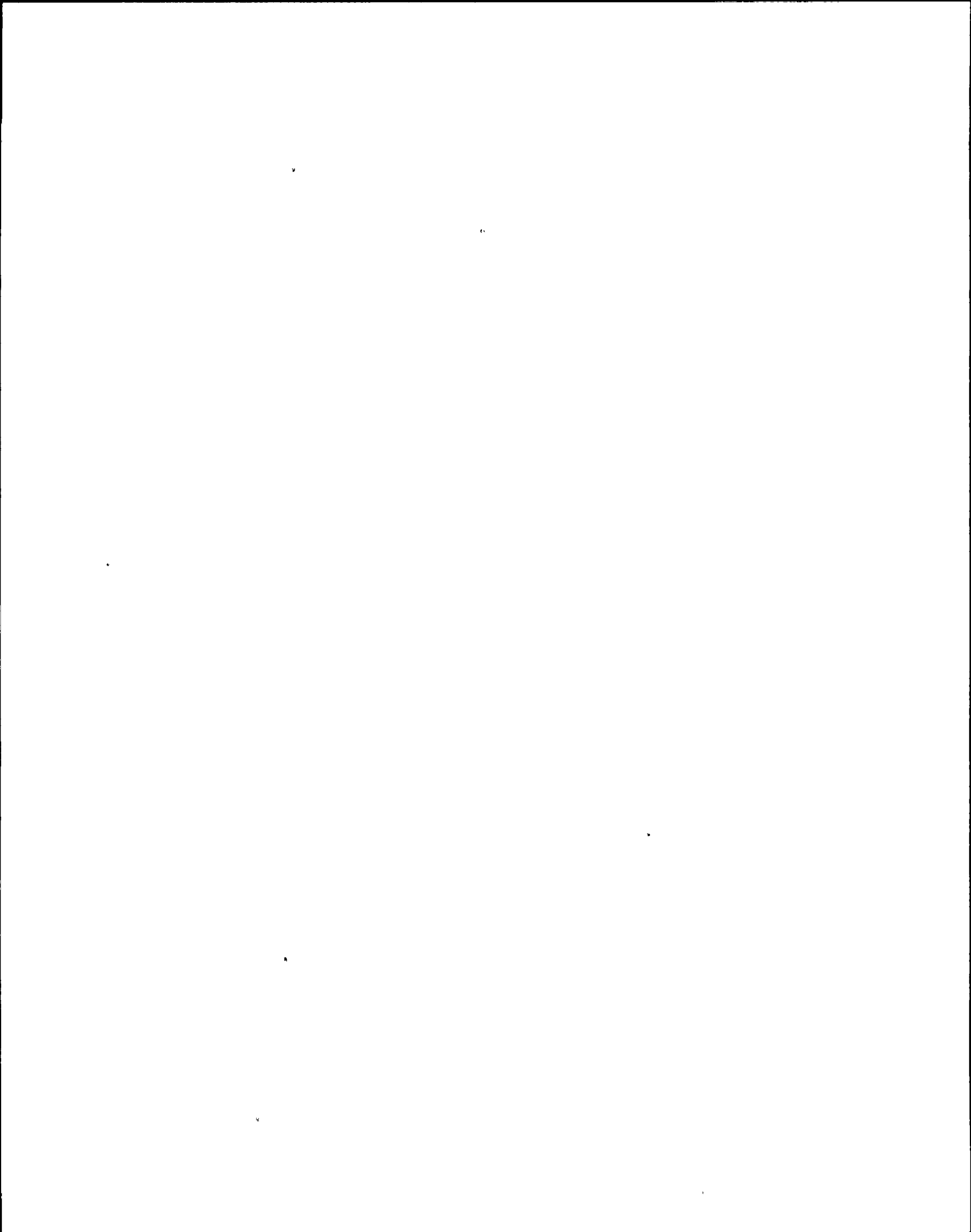
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-RV85B	RCS-E4B Relief	NOT GAGGED			
2CCP-V720	RCS-E4B Outlet Line Vent	SHUT			
2CCP-V709	RCS-E4B Outlet Line Vent	SHUT AND CAPPED			
2CCP-V735	RCS-E4B Outlet Line Drain	SHUT			
2CCP-V736	RCS-E4B Outlet Line Drain	SHUT AND CAPPED			
2CCP-V826	RCS 1B Recirc Pump Seal Clr 4B Outlet Isol.	THROTTLED			45° OPEN FROM FULL SHUT
2CCP-V738	RCS-E4B Outlet Line Drain	SHUT			
2CCP-V737	RCS-E4B Outlet Line Drain	SHUT AND CAPPED			
2CCP-V700	RCS 1B Mtr Brg Cooler RCS-E3B Inlet Isol.	OPEN			
2CCP-V727	RCS-E3B Inlet Line Drain	SHUT			
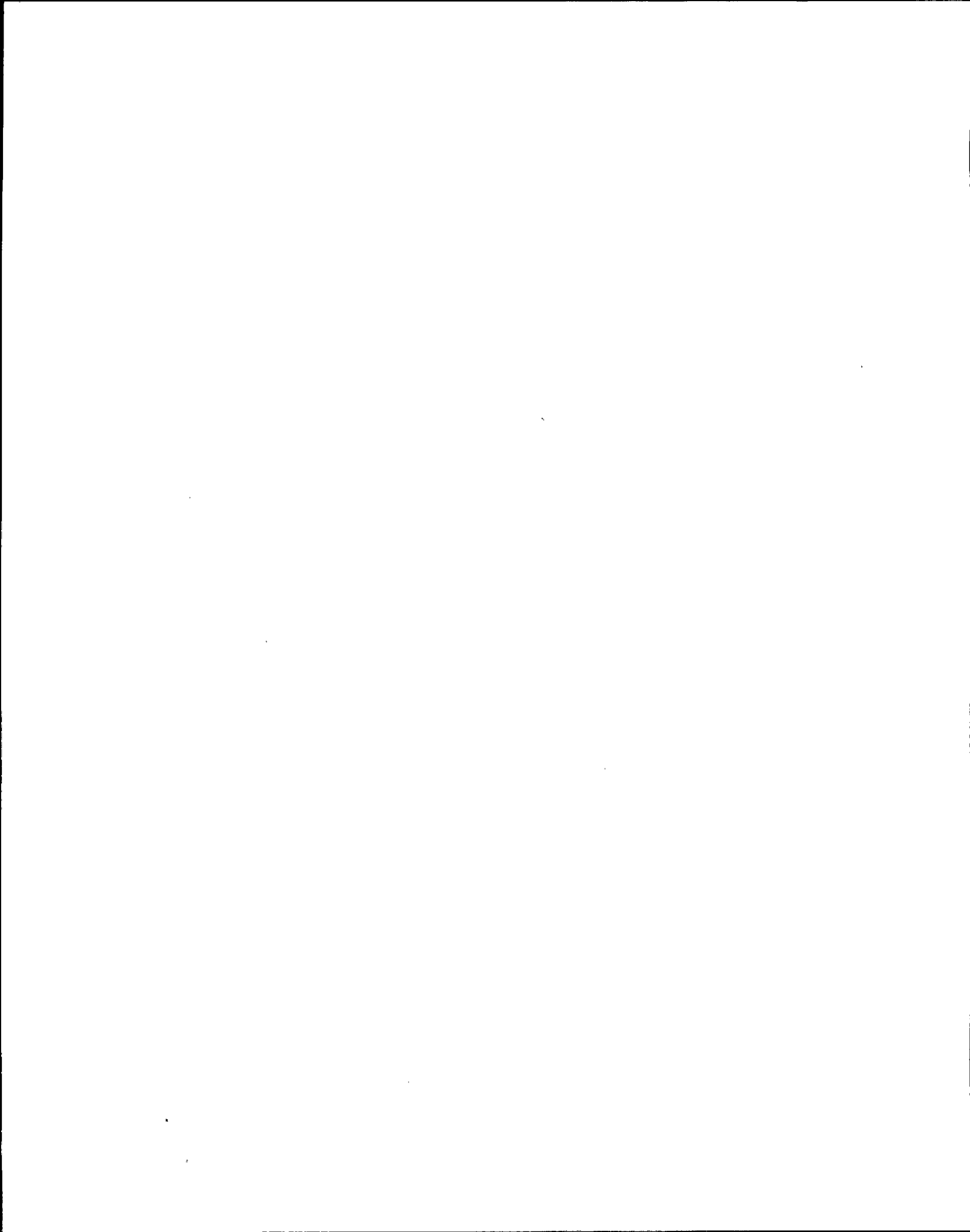
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V728	RCS-E3B Inlet Line Drain	SHUT AND CAPPED			
2CCP-RV84B	RCS-E3B Relief	NOT GAGGED			
2CCP-V710	RCS-E3B Outlet Line Vent	SHUT AND CAPPED			
2CCP-V719	RCS-E3B Outlet Line Vent	SHUT			
2CCP-V825	RCS 1B Mtr Brg Cooler RCS-E3B Outlet Isol.	OPEN			
2CCP-V702	RCS 1B Mtr Brg Cooler RCS-E2B Inlet Isol.	OPEN			
2CCP-V729	RCS-E2B Inlet Line Drain	SHUT			
2CCP-V730	RCS-E2B Inlet Line Drain	SHUT AND CAPPED			
2CCP-RV83B	RCS-E2B Relief	NOT GAGGED			
2CCP-V945	RCS-E2B Inlet Line Vent	SHUT AND CAPPED			
2CCP-V944	RCS-E2B Inlet Line Vent	SHUT			
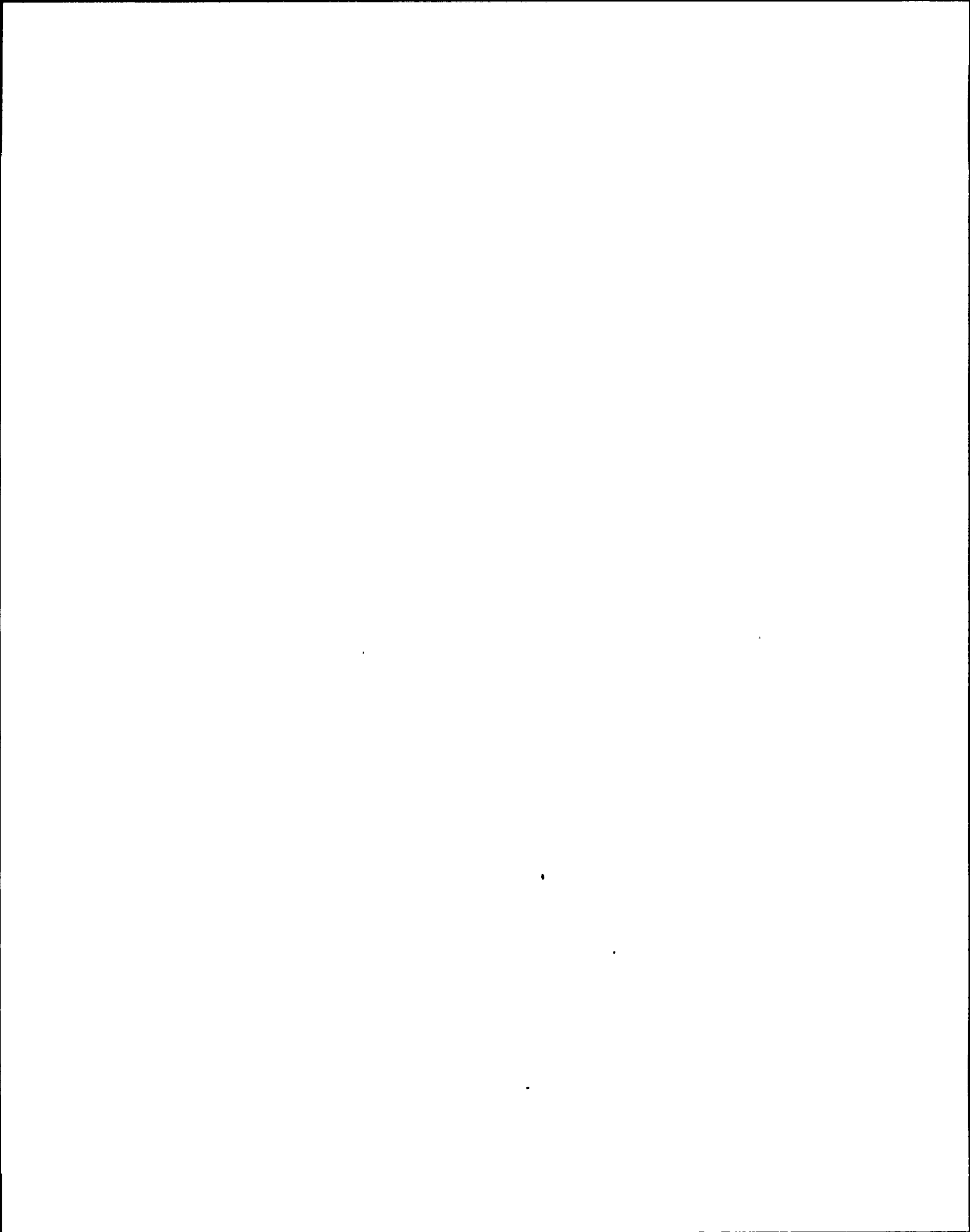
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V718	RCS-E2B Outlet Line Vent	SHUT			
2CCP-V711	RCS-E2B Outlet Line Vent	SHUT AND CAPPED			
2CCP-V824	RCS 1B Mtr Brg Cooler RCS-E2B Outlet Isol.	OPEN			
2CCP-V701	RCS 1B Winding Clr 2RCS-E5B Inlet Isol.	OPEN			
2CCP-V731	RCS-E5B Inlet Line Drain	SHUT			
2CCP-V732	RCS-E5B Inlet Line Drain	SHUT AND CAPPED			
2CCP-RV82B	RCS-E5B Relief	NOT GAGGED			
2CCP-V717	RCS-E5B Outlet Line Vent	SHUT			
2CCP-V712	RCS-E5B Outlet Line Vent	SHUT AND CAPPED			
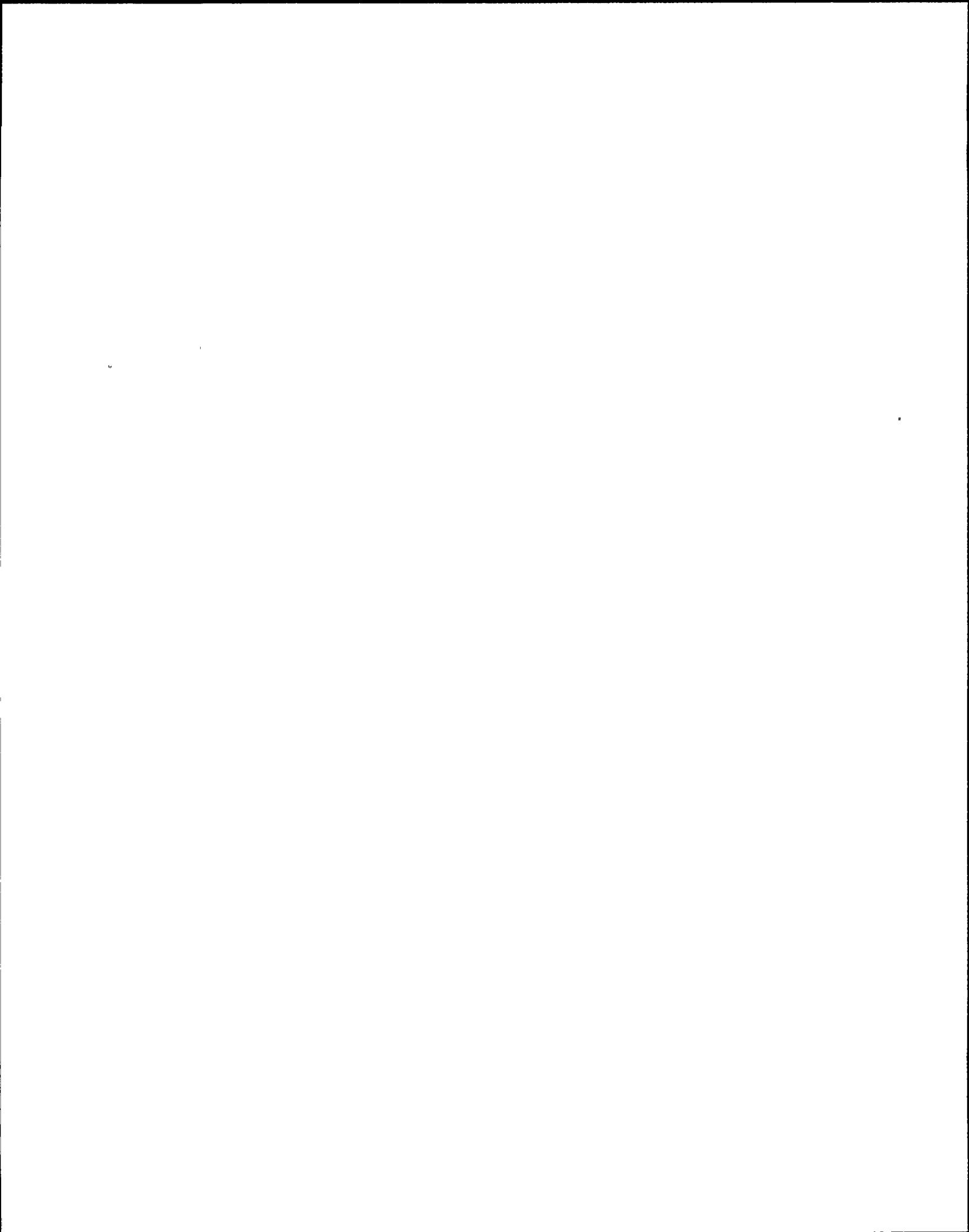
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VALVE LINEUP

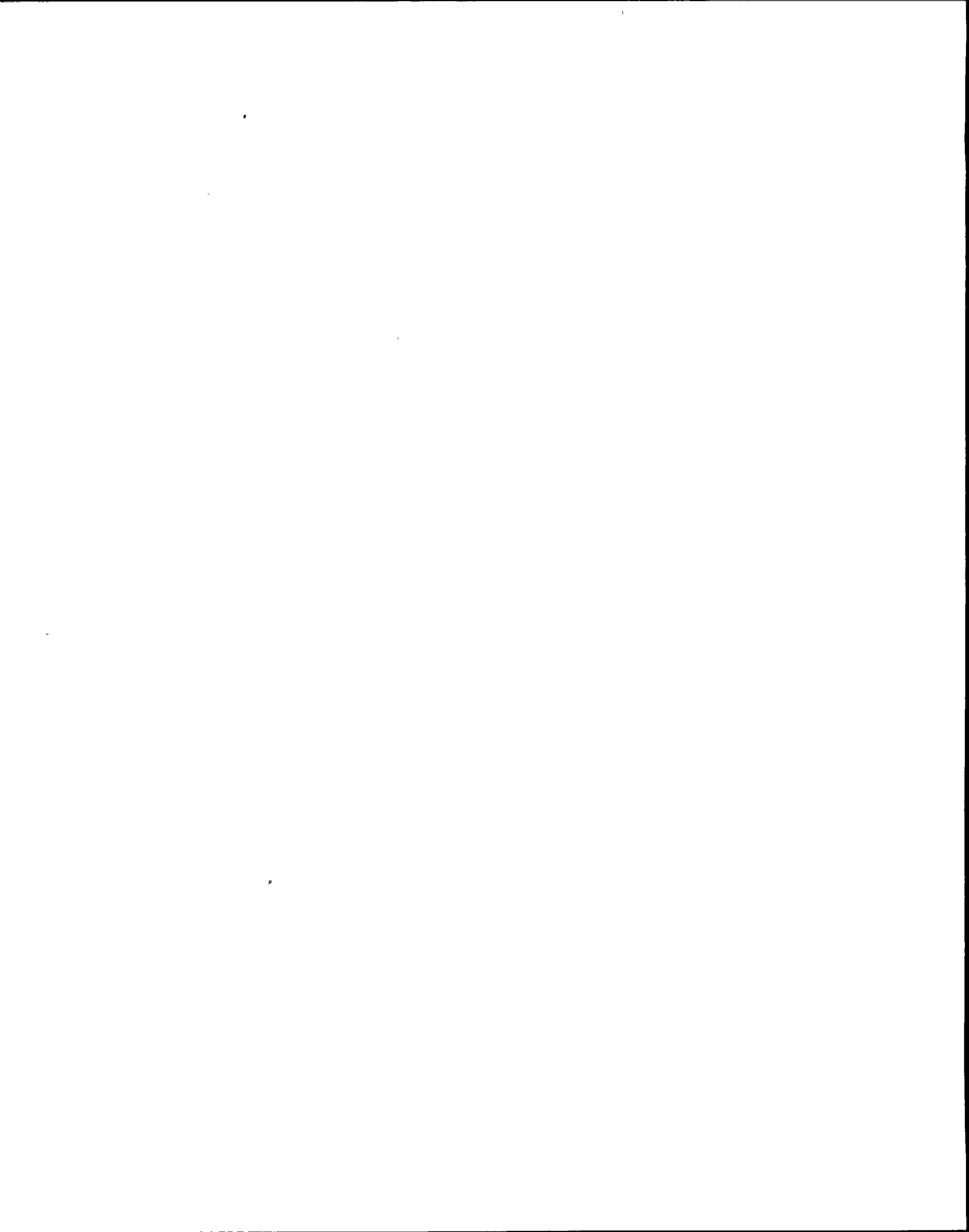| VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V823	RCS 1B Winding Clr RCS-E5B Outlet Isol.	THROTTLED			3 TURNS OPEN FROM FULL SHUT
2CCP-V703	RCS 1B Winding Clr RCS-E5D Inlet Isol.	OPEN			
2CCP-V733	RCS-E5D Inlet Line Drain	SHUT			
2CCP-V734	RCS-E5D Inlet Line Drain	SHUT AND CAPPED			
2CCP-RV82D	RCS-E5D Relief	NOT GAGGED			
2CCP-V716	RCS-E5D Outlet Line Vent	SHUT			
2CCP-V714	RCS-E5D Outlet Line Vent	SHUT AND CAPPED			
2CCP-V822	RCS 1B Winding Clr RCS-E5D Outlet Isol.	THROTTLED			3 TURNS OPEN FROM FULL SHUT
2CCP-V722	RCS-E5B, E5D Outlet Hdr Vent	SHUT			
2CCP-V721	RCS-E5B, E5D Outlet Hdr Vent	SHUT AND CAPPED			
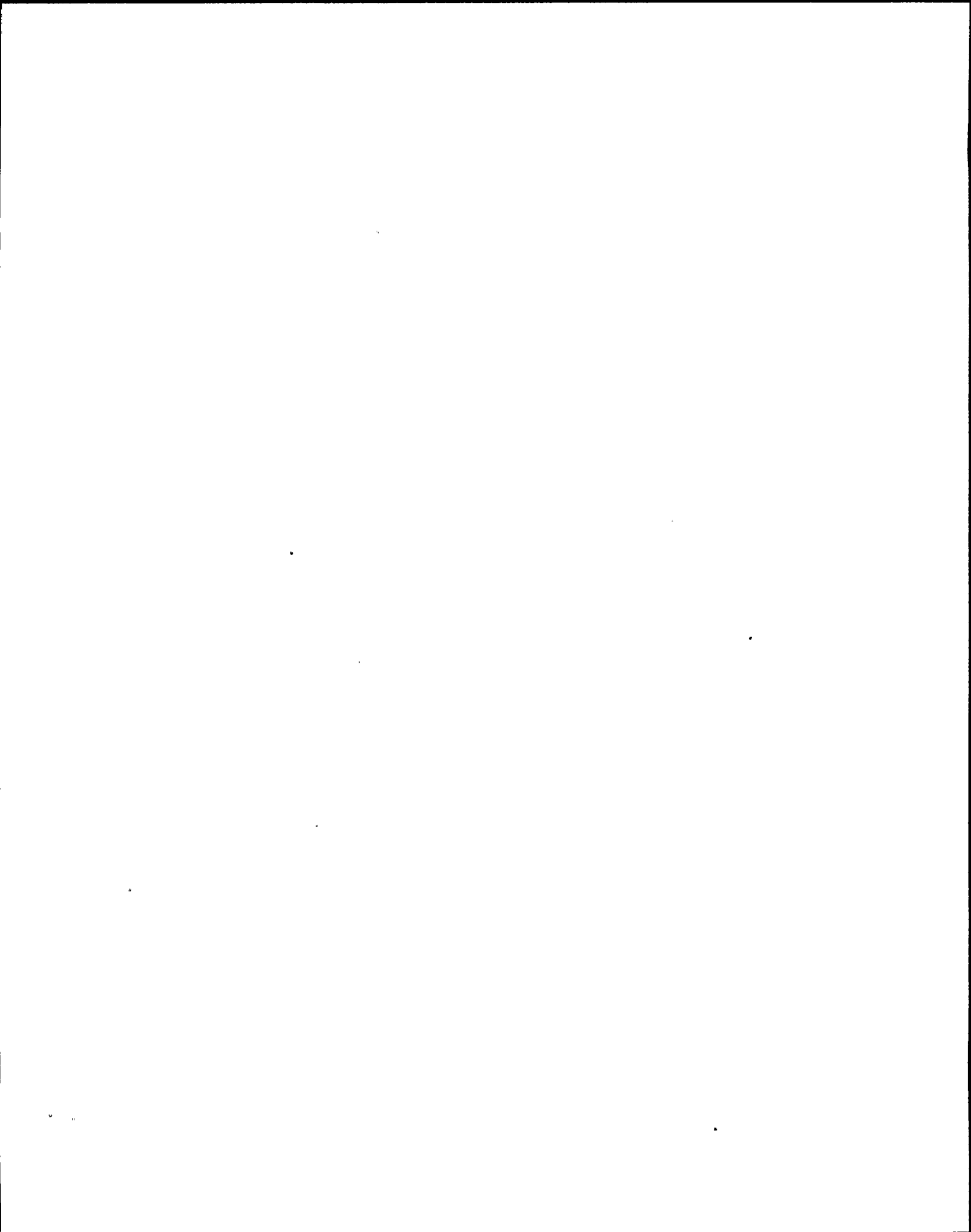
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V739	CCP Return Hdr Drain	SHUT			
2CCP-V740	CCP Return Hdr Drain	SHUT AND CAPPED			
	DRYWELL El. 261'				
2CCP*RV170	Recirc Pump Mtr Winding Inlet Hdr Relief	NOT GAGGED			
2CCP*V533	RCS Pump Mtr Winding Inlet Hdr Drain	SHUT			
2CCP*V546	RCS Pump Mtr Winding Inlet Hdr Drain	SHUT AND CAPPED			
2CCP*V698	Man Isol Dnstr of MOV 94B	OPEN			
2CCP*V715	RCS Pump Mtr Winding Inlet Hdr Vent	SHUT			
2CCP*V713	RCS Pump Mtr Winding Inlet Hdr Vent	SHUT AND CAPPED			
2CCP*V723	RCS Pump Mtr Winding Inlet Hdr Drain	SHUT			
2CCP*V724	RCS Pump Mtr Winding Inlet Hdr Drain	SHUT AND CAPPED			
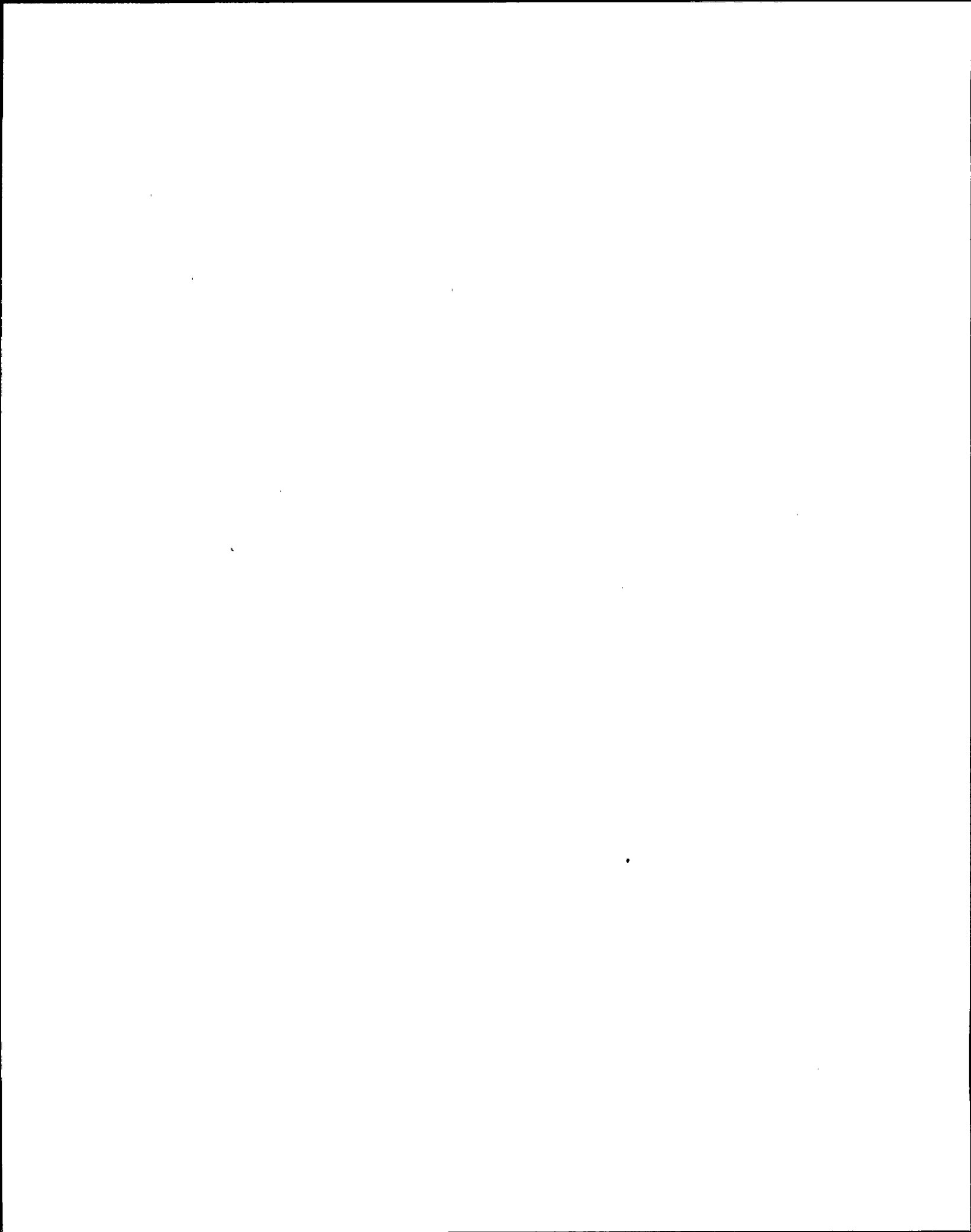
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP* V943	Drain Conn Upstr Of MOV15B	SHUT AND CAPPED			
2CCP* RV171	RCS Pump Mtr Winding Hdr Outlet Relief	NOT GAGGED			
2CCP- V537	Vent Upstr of MOV16B	SHUT			
2CCP- V540	Vent Upstr of MOV16B	SHUT AND CAPPED			
2CCP- V481	Vent Upstr of MOV16B	SHUT			
2CCP- V539	Vent Upstr of MOV16B	SHUT AND CAPPED			
2CCP- V697	Man Isol. Upstr of MOV16B	OPEN			
2CCP- V360	Test Conn Dnstr of MOV94A	SHUT			
2CCP- V550	Test Conn Dnstr of MOV94A	SHUT AND CAPPED			
2CCP- V741	Man Isol. Dnstr of MOV 94A	OPEN			
2CCP- V753	Drain Dnstr of V741	SHUT			

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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V754	Drain Dnstr of V741	SHUT AND CAPPED			
2CCP-V767	Drain Upstr of V742	SHUT			
2CCP-V768	Drain Upstr of V742	SHUT AND CAPPED			
2CCP-V556	Test Conn Dnstr of V742	SHUT AND CAPPED			
2CCP-V530	Test Conn Dnstr of V742	SHUT			
2CCP-V479	Drain Upstr of MOV16A	SHUT			
2CCP-V557	Drain Upstr of MOV16A	SHUT AND CAPPED			
2CCP-V742	Man Isol Upstr of MOV 16A	OPEN			
	DRYWELL EL. 250'				
2CCP-V511	Man Isol Dnstr of MOV-273	OPEN			
2CCP-V89	Drain Dnstr of MOV273	SHUT			
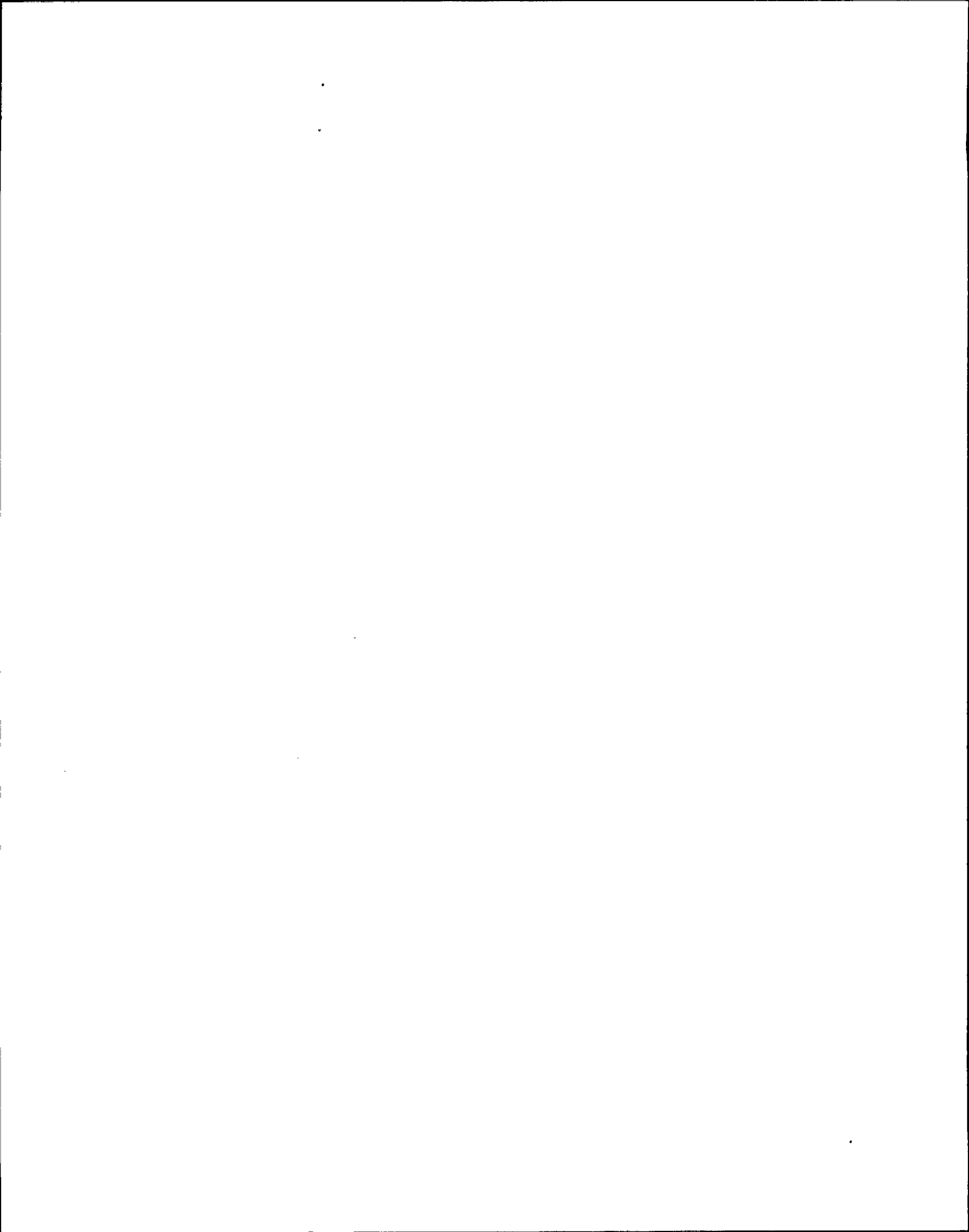
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V515	Drain Dnstr of MOV273	SHUT AND CAPPED			
2CCP-V516	Drain Upstr of MOV122	SHUT			
2CCP-V517	Drain Upstr of MOV122	SHUT AND CAPPED			
2CCP-V512	Man Isol Upstr Of MOV 122	OPEN			
2CCP-RV73A	Drywell Clr DRS-UC1A Relief	NOT GAGGED			
2CCP-V446	DRS-UC1A Inlet Line Drain	SHUT			
2CCP-V580	DRS-UC1A Inlet Line Drain	SHUT AND CAPPED			
2CCP-V587	DRS-UC1A Inlet Line Drain	SHUT			
2CCP-V579	DRS-UC1A Inlet Line Drain	SHUT AND CAPPED			
2CCP-V572	DRS-UC1A Outlet Line Test Conn	SHUT AND CAPPED			
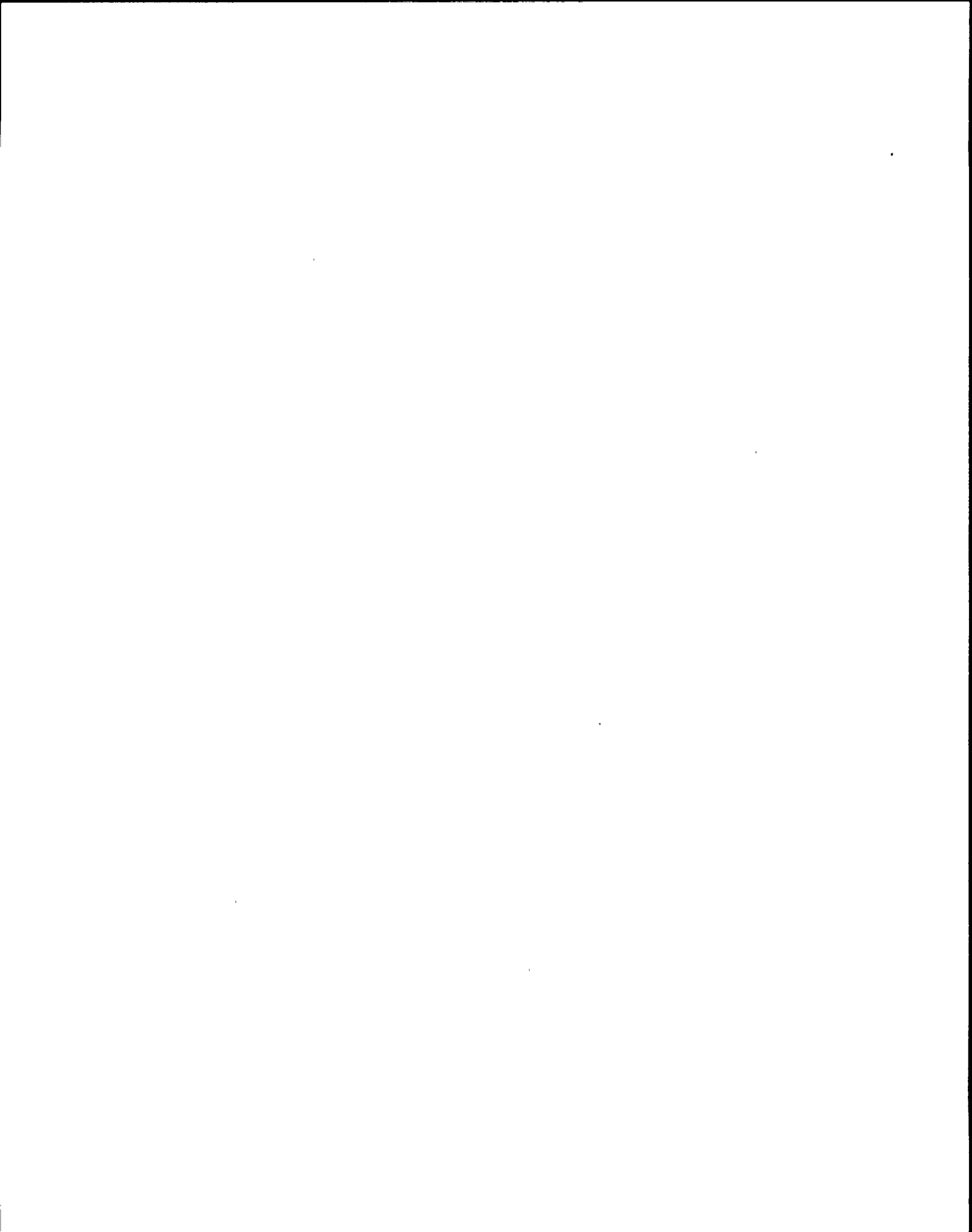
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V455	DRS-UC1A Outlet Line Test Conn	SHUT			
2CCP-V573	DRS-UC1A Outlet Line Test Conn	SHUT AND CAPPED			*
2CCP-V458	DRS-UC1A Outlet Line Test Conn	SHUT			*
2CCP-V606	DRS-UC1A Outlet Line Drain	SHUT			
2CCP-V607	DRS-UC1A Outlet Line Drain	SHUT AND CAPPED			
2CCP-V604	DRS-UC1A Outlet Line Drain	SHUT			
2CCP-V605	DRS-UC1A Outlet Line Drain	SHUT AND CAPPED			
2CCP-V467	2DRS-UC1A Outlet Isol.	OPEN			
2CCP-V469	2DRS-UC1A Outlet Isol.	OPEN			
2CCP-V75	2DRS-UC1A Outlet Check	INSTALLED			
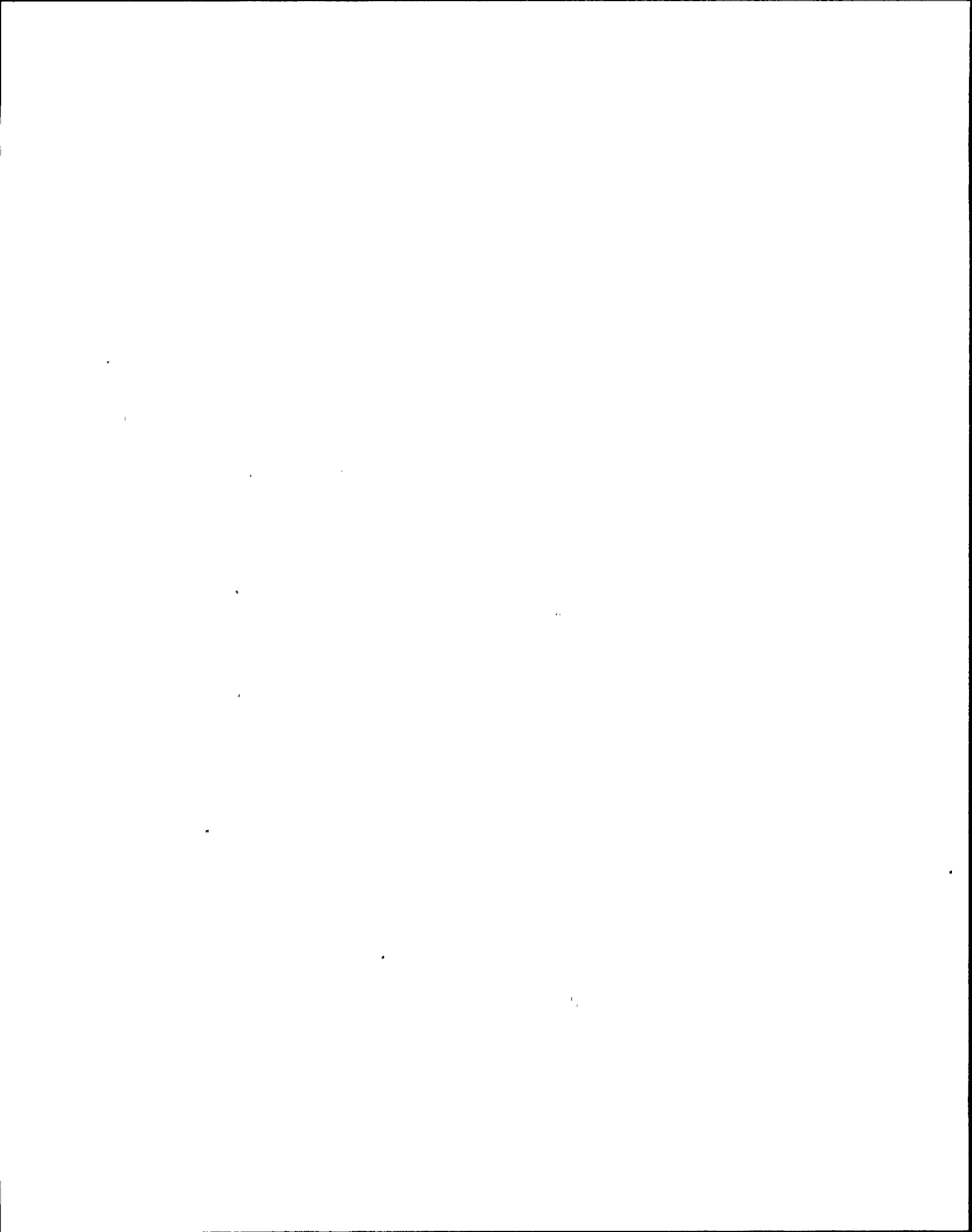
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V80	2DRS-UC1A Hdr Outlet Isol.	THROTTLED			37 1/2° BETWEEN PIN 3 & 4
2CCP-RV73B	2DRS-UC1B Relief	NOT GAGGED			
2CCP-V404	DRS-UC1B Inlet Line Drain	SHUT			
2CCP-V565	DRS-UC1B Inlet Line Drain	SHUT AND CAPPED			
2CCP-V560	DRS-UC1B Outlet Line Drain	SHUT AND CAPPED			
2CCP-V413	DRS-UC1B Outlet Line Drain	SHUT			
2CCP-V603	DRS-UC1B Outlet Line Drain	SHUT AND CAPPED			
2CCP-V602	DRS-UC1B Outlet Line Drain	SHUT			
2CCP-V86	2DRS-UC1B Outlet Check	INSTALLED			
2CCP-V95	2DRS-UC1B Outlet Isol.	THROTTLED			37 1/2° BETWEEN PIN 3 & 4
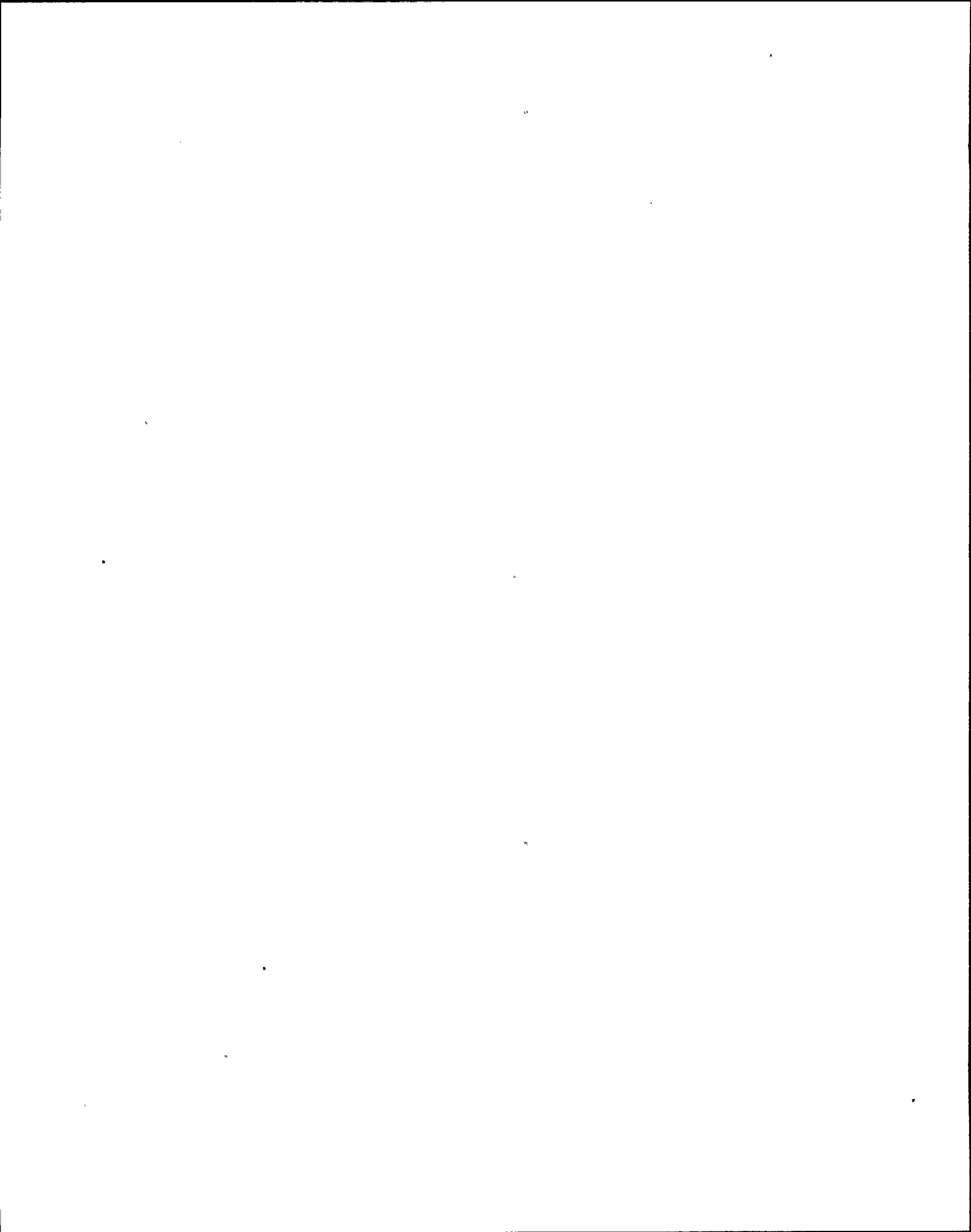
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-RV73C	2DRS-UC1C Relief	NOT GAGGED			
2CCP-V563	DRS-UC1C Inlet Line Drain	SHUT AND CAPPED			
2CCP-V402	DRS-UC1C Inlet Line Drain	SHUT			
2CCP-V407	DRS-UC1C Outlet Line Test Conn	SHUT			
2CCP-V558	DRS-UC1C Outlet Line Test Conn	SHUT AND CAPPED			
2CCP-V637	DRS-UC1C Outlet Line Drain	SHUT			
2CCP-V638	DRS-UC1C Outlet Line Drain	SHUT AND CAPPED			
2CCP-V88	2DRS-UC1C Outlet Check	INSTALLED			
2CCP-V96	2DRS-UC1C Outlet Isol.	THROTTLED			50° BET-WEEN PIN 4 & 5
2CCP-RV73D	2DRS-UC1D Relief	NOT GAGGED			
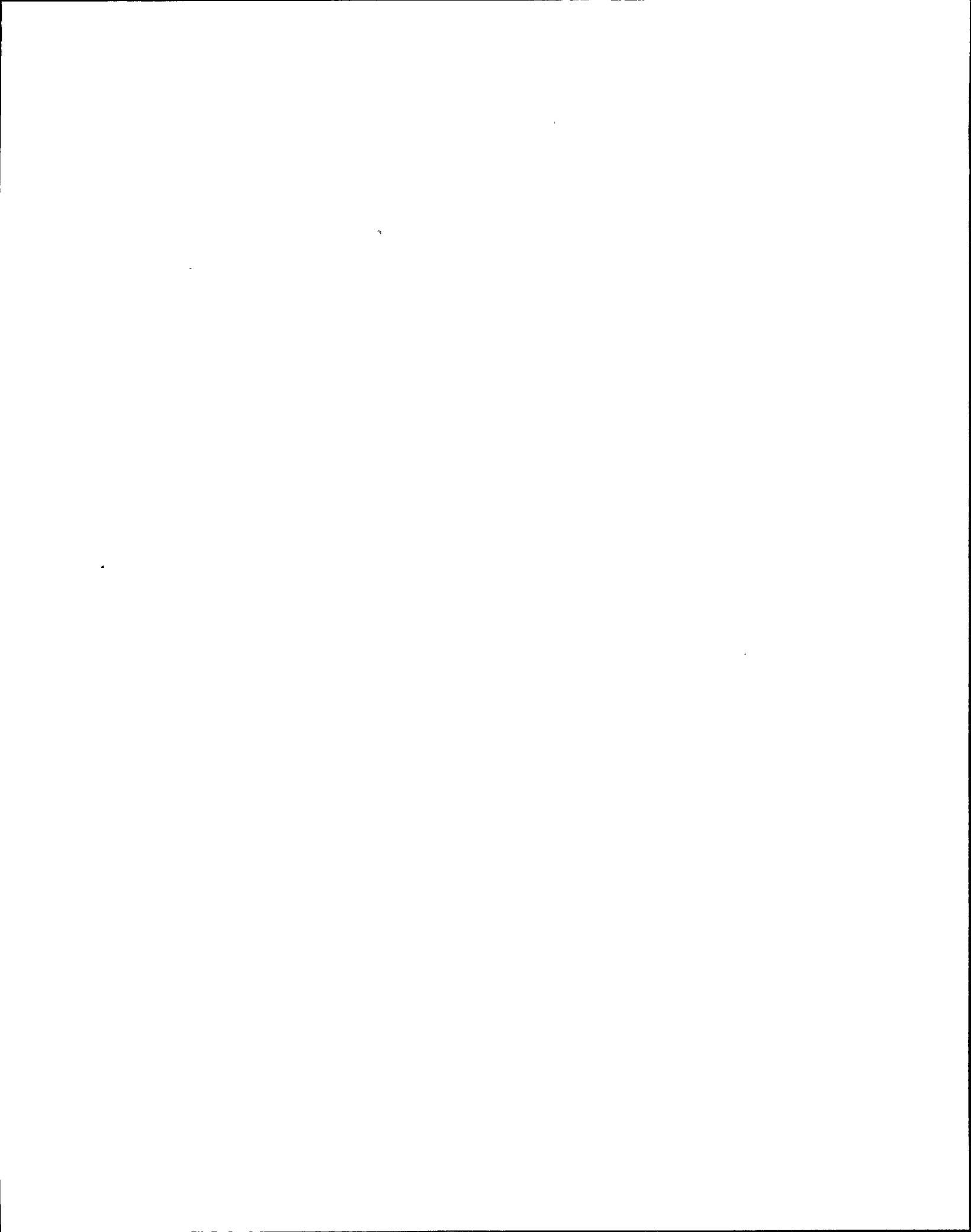
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V459	DRS-UC1D Inlet Line Drain	SHUT			
2CCP-V581	DRS-UC1D Inlet Line Drain	SHUT AND CAPPED			
2CCP-V441	DRS-UC1D Inlet Line Test Conn	SHUT			
2CCP-V575	DRS-UC1D Inlet Line Test Conn	SHUT AND CAPPED			
2CCP-V472	2DRS-UC1D Outlet Isol.	OPEN			
2CCP-V442	DRS-UC1D Outlet Line Test Conn	SHUT AND CAPPED			
2CCP-V574	DRS-UC1D Outlet Line Test Conn	SHUT			
2CCP-V471	2DRS-UC1D Outlet Isol.	OPEN			
2CCP-V600	DRS-UC1D Outlet Line Drain	SHUT			
2CCP-V601	DRS-UC1D Outlet Line Drain	SHUT AND CAPPED			
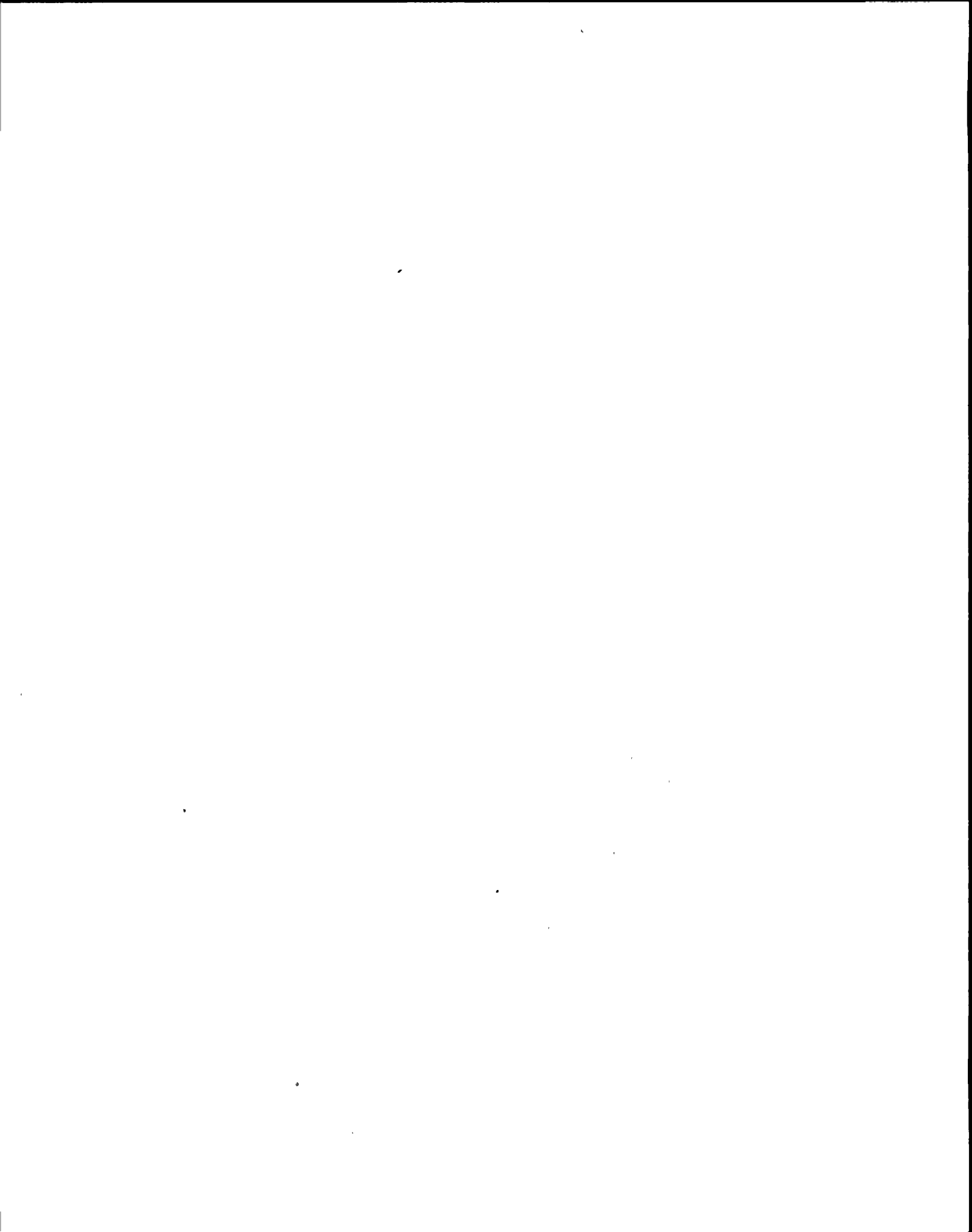
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V94	2DRS-UC1D Outlet Check	INSTALLED			
2CCP-V99	2DRS-UC1D Hdr Outlet Isolation	THROTTLED			40° BETWEEN PIN 3 & 4
2CCP-RV23A	2DRS-UC2A Relief	NOT GAGGED			
2CCP-V453	2DRS-UC2A Inlet Line Drain	SHUT			
2CCP-V578	2DRS-UC2A Inlet Line Drain	SHUT AND CAPPED			
2CCP-V437	2DRS-UC2A Outlet Line Test Conn	SHUT			
2CCP-V571	2DRS-UC2A Outlet Line Test Conn	SHUT AND CAPPED			
2CCP-V639	DRS-UC2A Outlet Line Drain	SHUT			
2CCP-V640	DRS-UC2A Outlet Line Drain	SHUT AND CAPPED			
2CCP-V77	2DRS-UC2A Outlet Check Valve	INSTALLED			
2CCP-V81	2DRS-UC2A Outlet Isol.	THROTTLED			35° BETWEEN PIN 3 & 4
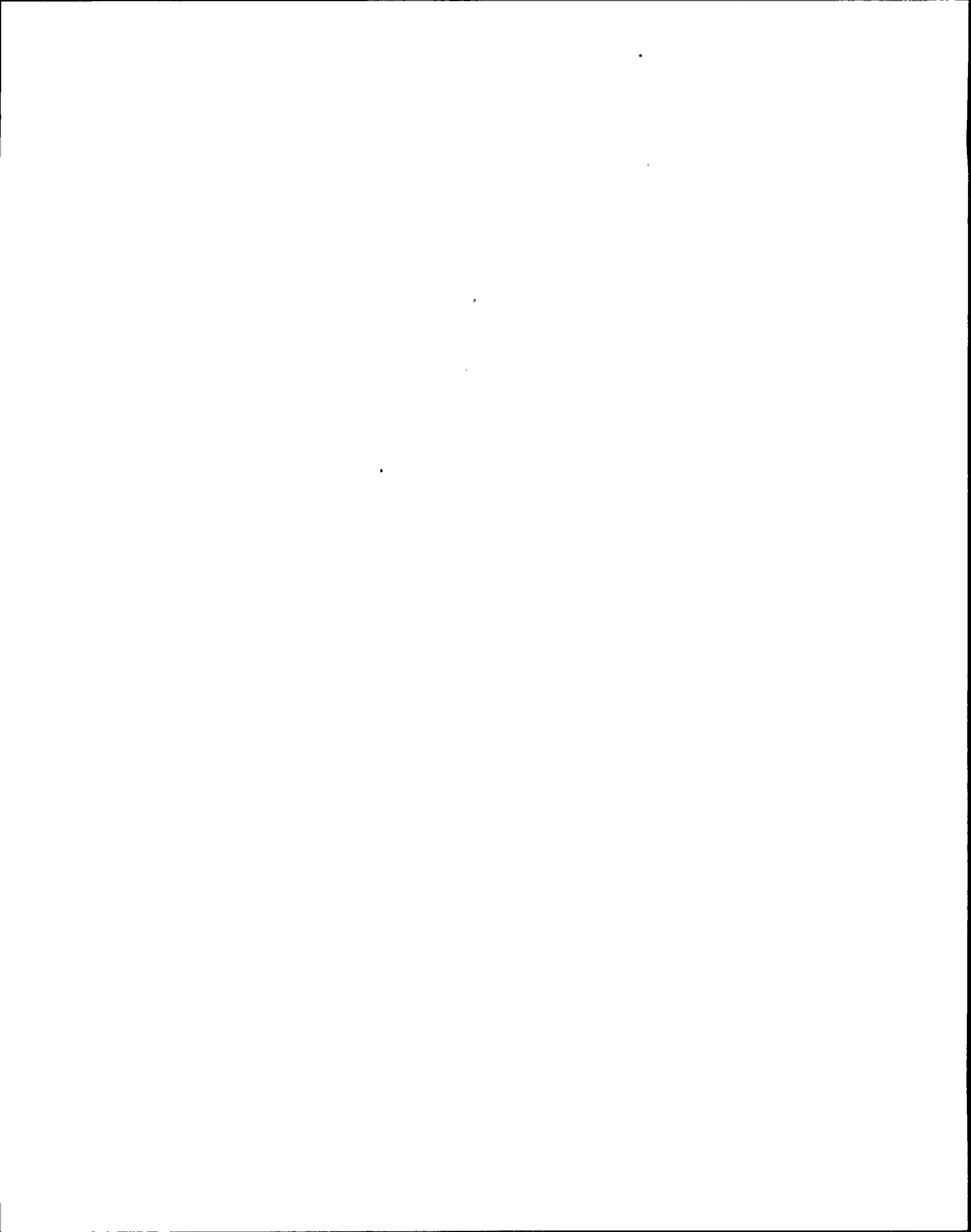
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V907	DRS Unit Coolers Outlet Hdr Vent	SHUT			
2CCP-V910	DRS Unit Coolers Outlet Hdr Vent	SHUT AND CAPPED			
2CCP-RV23B	2DRS-UC2B Relief	NOT GAGGED			
2CCP-V451	DRS-UC2B Inlet Line Drain	SHUT			
2CCP-V577	DRS-UC2B Inlet Line Drain	SHUT AND CAPPED			
2CCP-V594	DRS-UC2B Outlet Line Test Conn	SHUT			
2CCP-V570	DRS-UC2B Outlet Line Test	SHUT AND CAPPED			
2CCP-V645	DRS-UC2B Outlet Line Drain	SHUT AND CAPPED			
2CCP-V641	DRS-UC2B Outlet Line Drain	SHUT			
2CCP-V79	2DRS-UC2B Outlet Check	INSTALLED			
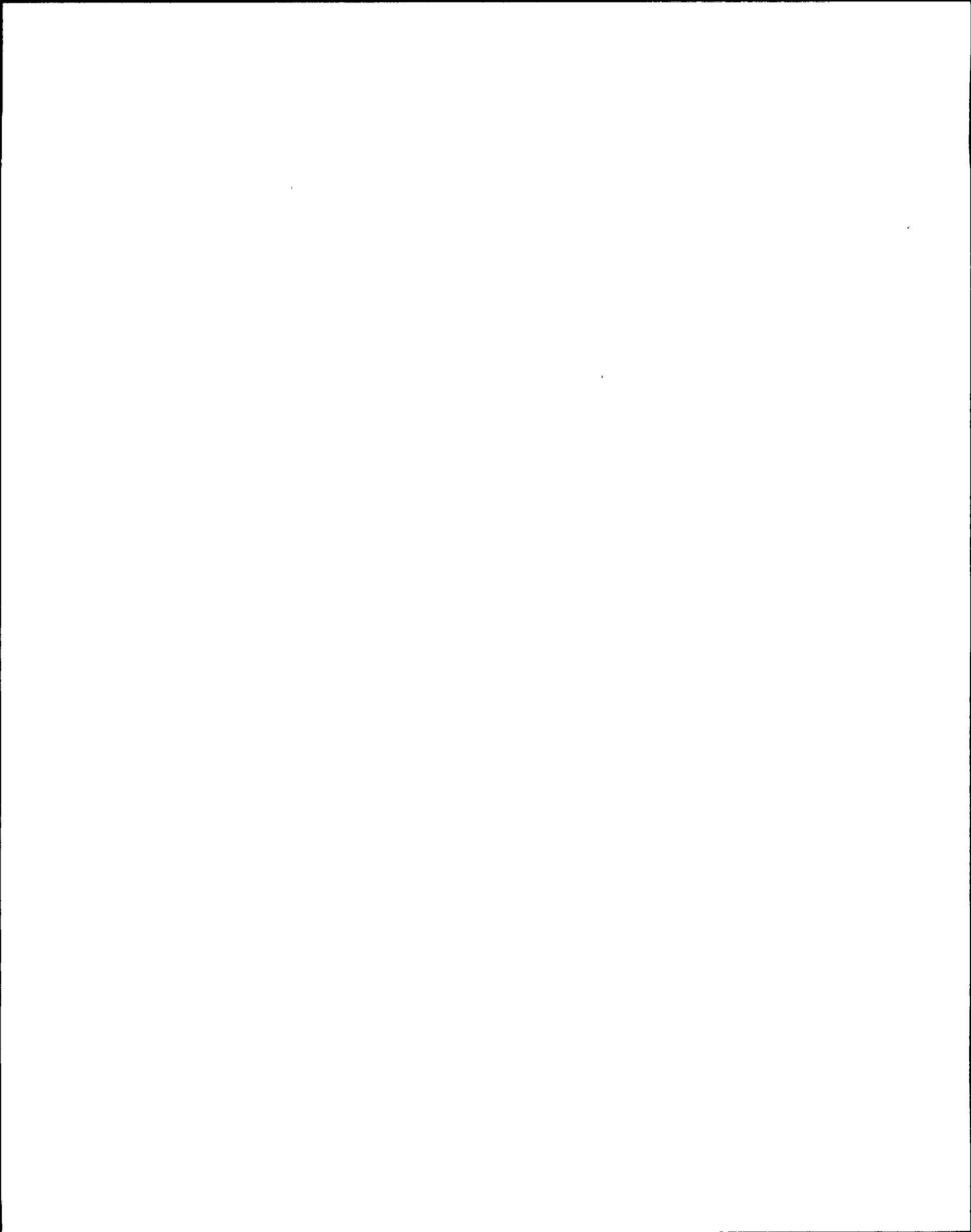
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V82	2DRS-UC2B Outlet Isol.	THROTTLED			35° BET-WEEN PIN 3 & 4
2CCP-V909	DRS Unit Coolers Inlet Hdr Drain	SHUT AND CAPPED			
2CCP-V908	DRS Unit Coolers Inlet Hdr Drain	SHUT			
2CCP-RV23C	2DRS-UC2C Relief	NOT GAGGED			
2CCP-V403	DRS-UC2C Inlet Line Drain	SHUT			
2CCP-V564	DRS-UC2C Inlet Line Drain	SHUT AND CAPPED			
2CCP-V410	DRS-UC2C Outlet Line Test Conn	SHUT			
2CCP-V559	DRS-UC2C Outlet Line Test Conn	SHUT AND CAPPED			
2CCP-V646	DRS-UC2C Outlet Line Drain	SHUT AND CAPPED			
2CCP-V642	DRS-UC2C Outlet Line Drain	SHUT			
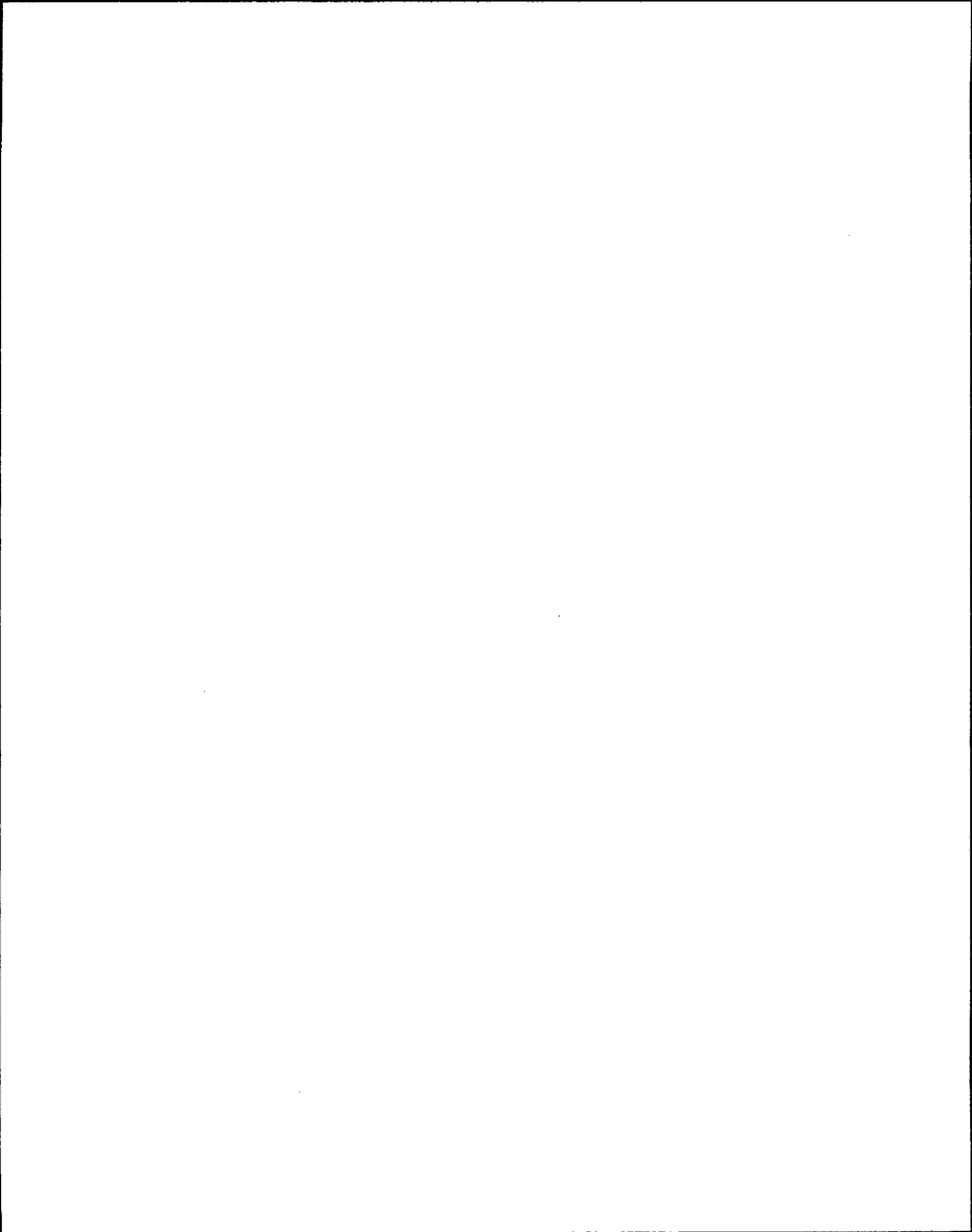
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V90	2DRS-UC2C Outlet Check	INSTALLED			
2CCP-V97	2DRS-UC2C Outlet Isol.	THROTTLED			35° BET-WEEN PIN 3 & 4
2CCP-RV23D	2DRS-UC2D Relief	NOT GAGGED			
2CCP-V433	DRS-UC2D Inlet Line Drain	SHUT			
2CCP-V582	DRS-UC2D Inlet Line Drain	SHUT AND CAPPED			
2CCP-V461	DRS-UC2D Outlet Line Test Conn	SHUT			
2CCP-V576	DRS-UC2D Outlet Line Test Conn	SHUT AND CAPPED			
2CCP-V92	2DRS-UC2D Outlet Check	INSTALLED			
2CCP-V98	2DRS-UC2D Outlet Isol.	THROTTLED			35° BET-WEEN PIN 3 & 4
2CCP-RV27A	2DRS-UC3A Relief	NOT GAGGED			
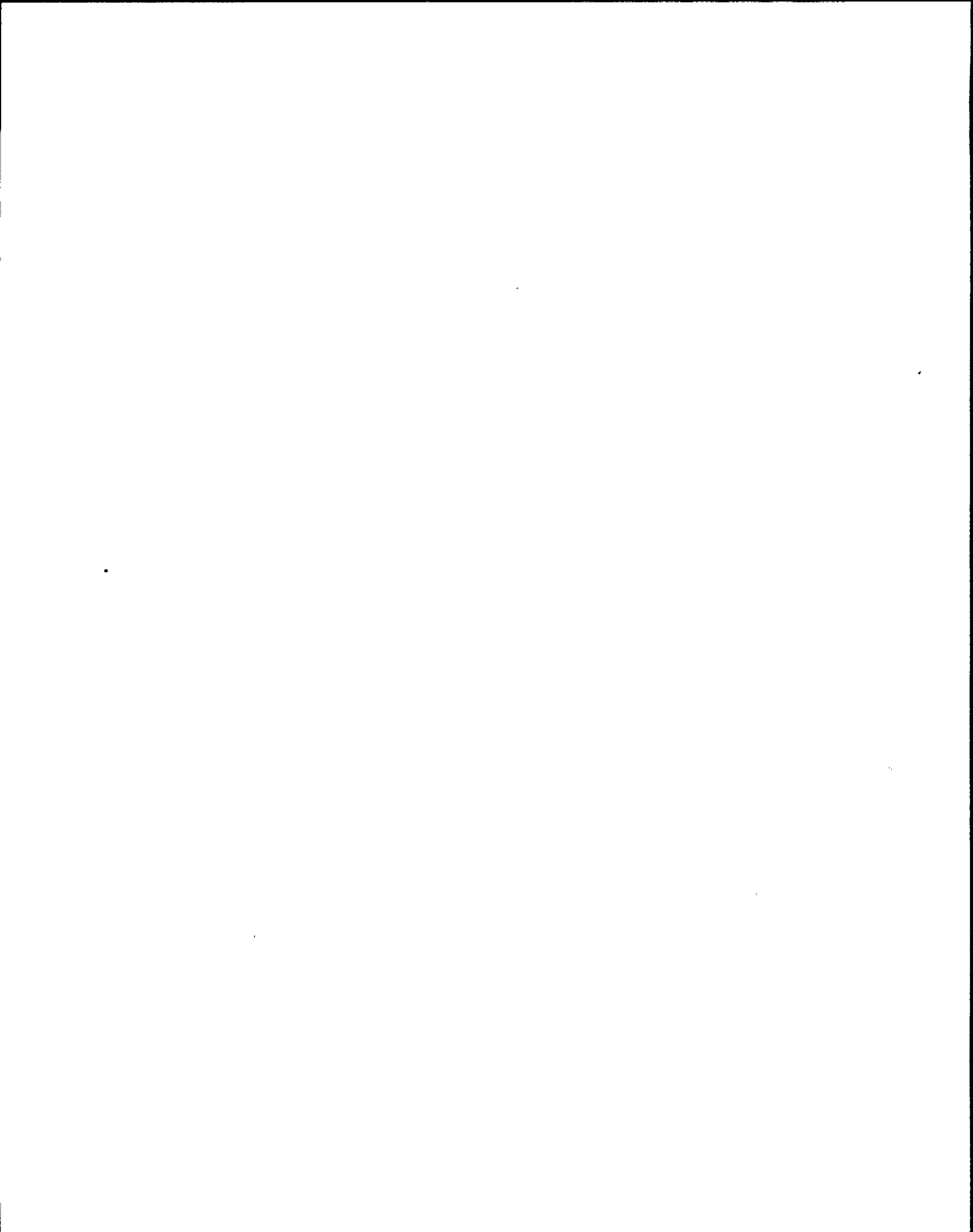
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V904	DRS-UC3A Inlet Line Drain	SHUT			
2CCP-V905	DRS-UC3A Inlet Line Drain	SHUT AND CAPPED			
2CCP-V405	DRS-UC3A Inlet Line Drain	SHUT			
2CCP-V567	DRS-UC3A Inlet Line Drain	SHUT AND CAPPED			
2CCP-V418	DRS-UC3A Outlet Line Test Conn	SHUT			
2CCP-V566	DRS-UC3A Outlet Line Test Conn	SHUT AND CAPPED			
2CCP-V399	2DRS-UC3A Outlet Isolation	OPEN			
2CCP-V416	DRS-UC3A Outlet Line Test Conn	SHUT			
2CCP-V561	DRS-UC3A Outlet Line Test Conn	SHUT AND CAPPED			
2CCP-V398	2DRS-UC3A Outlet Isolation	OPEN			
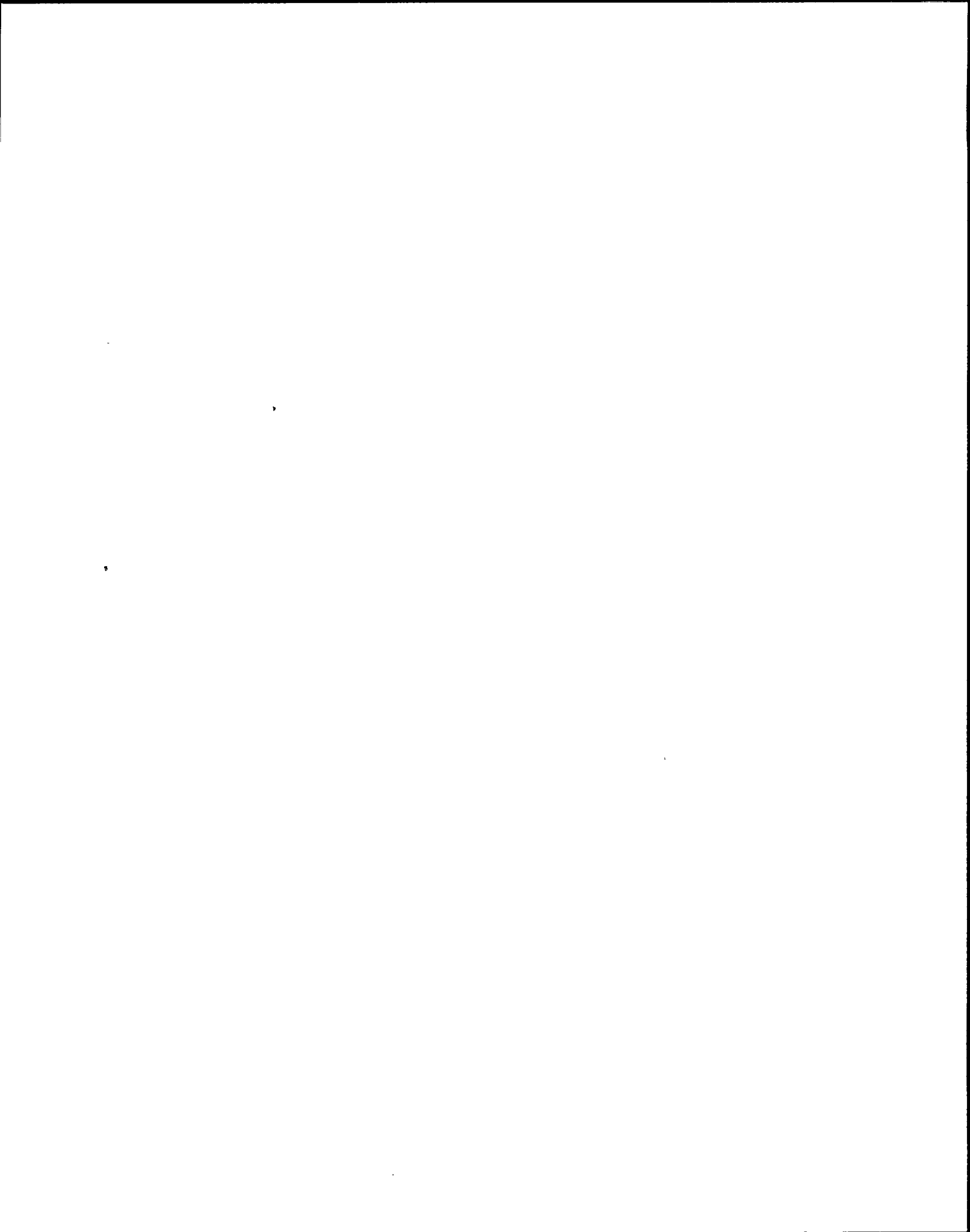
TABLE I   Page 57 of 69   \TCN-16

VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V649	DRS-UC3A Outlet Hdr Drain	SHUT			
2CCP-V650	DRS-UC3A Outlet Hdr Drain	SHUT AND CAPPED			
2CCP-V103	2DRS-UC3A Outlet Hdr Check	INSTALLED			
2CCP-V114	2DRS-UC3A Outlet Hdr Isolation	THROTTLED			45° PIN 4
2CCP-RV27B	2DRS-UC3B Relief	NOT GAGGED			
2CCP-V406	DRS-UC3B Inlet Line Drain	SHUT			
2CCP-V569	DRS-UC3B Inlet Line Drain	SHUT AND CAPPED			
2CCP-V420	DRS-UC3B Outlet Line Test Conn	SHUT			
2CCP-V568	DRS-UC3B Outlet Line Test Conn	SHUT AND CAPPED			
2CCP-V401	2DRS-UC3B Outlet Isol	OPEN			
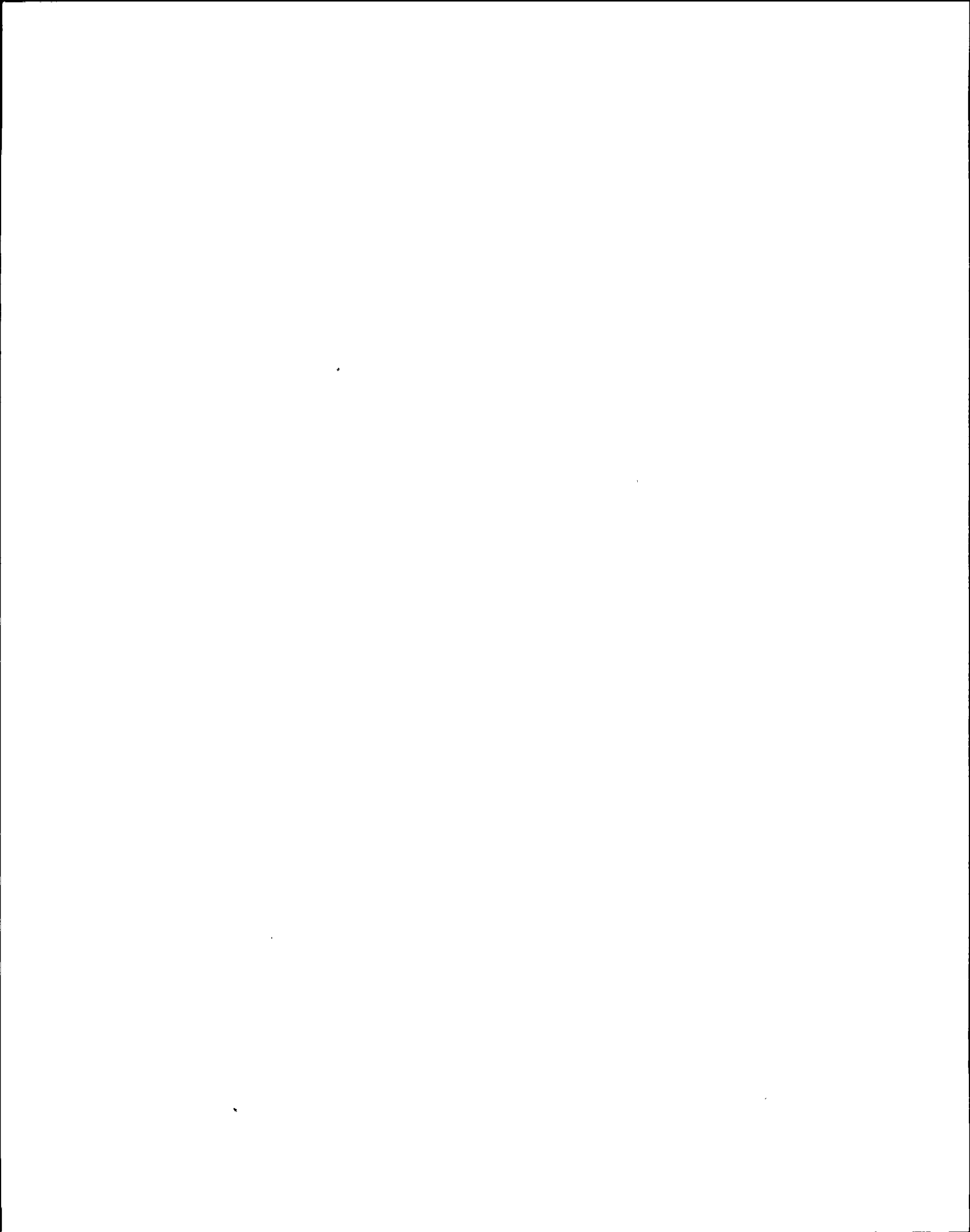
TABLE I   Page 58 of 69   TCN-16

VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V419	DRS-UC3B Outlet Line Test Conn	SHUT			
2CCP-V562	DRS-UC3B Outlet Line Test Conn	SHUT AND CAPPED			
2CCP-V400	2DRS-UC3B Outlet Isol	OPEN			
2CCP-V647	DRS-UC3B Outlet Hdr Drain	SHUT			
2CCP-V648	DRS-UC3B Outlet Hdr Drain	SHUT AND CAPPED			
2CCP-V137	DRS-UC3B Outlet Hdr Check	INSTALLED			
2CCP-V139	DRS-UC3B Outlet Hdr Isolation	OPEN			

TURBINE BLDG EL. 250'

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V843	Makeup wtr check valve to Exp Tank #2	INSTALLED			
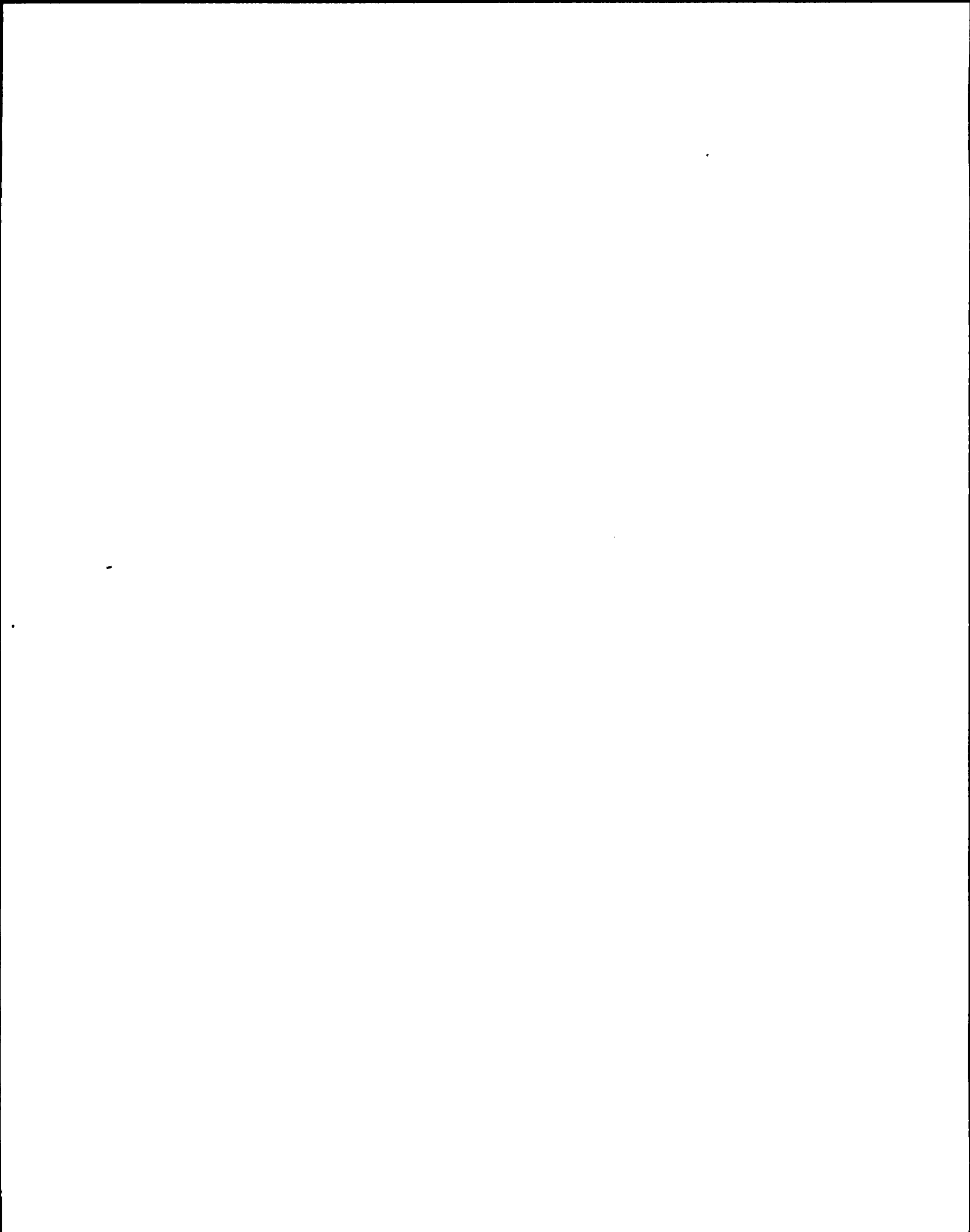
TABLE I   Page 59 of 69   TCN-16

VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V844	Inlet Isolation to AOV-180	OPEN			
2CCP-V845	AOV-180 Bypass Line Isol.	SHUT			
2CCP-V846	Outlet Isolation from AOV-180	OPEN			
2CCP-V915	AOV180 Bypass Line Drain	SHUT AND PLUGGED			
2CCP-V861	Expansion Tank #2 Level Stand Isol.	OPEN			
2CCP-V862	Expansion Tank #2 Level Stand Isol.	OPEN			
2CCP-V878	TNK2 Level Stand Vent	SHUT AND CAPPED			
2CCP-V922	LSY-180 Inst. Root Isolation	OPEN			
2CCP-V924	LSY-180 Inst. Vent	SHUT AND CAPPED			
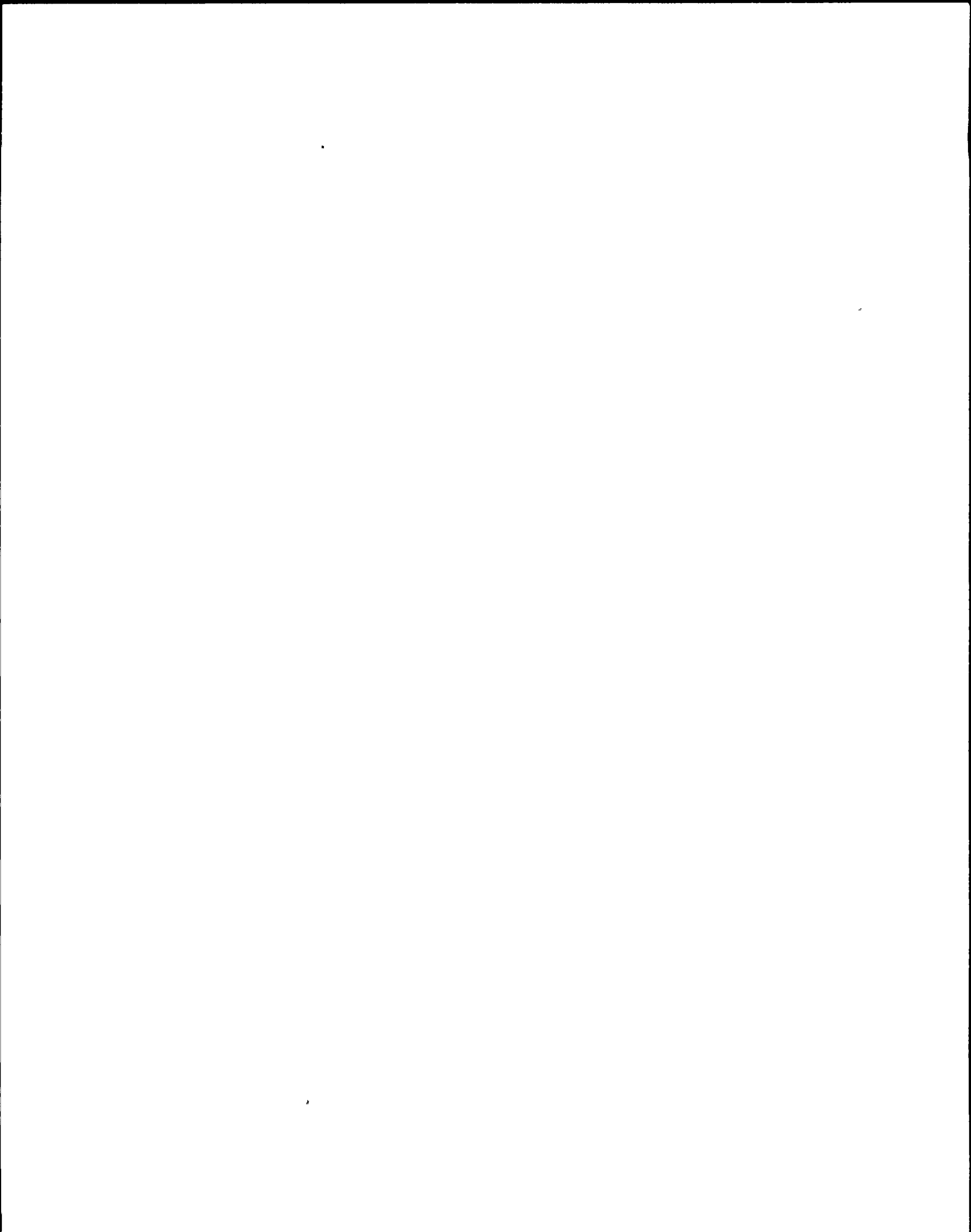
VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V925	LSY-180 Inst. Drain	SHUT AND CAPPED			
2CCP-V923	LSY-180 Inst. Root Isol.	OPEN			
2CCP-V868	Tk 2 Level Stand Drain	SHUT AND CAPPED			
2CCP-V897	LSX-180 Inst. Root Isolation	OPEN			
2CCP-V899	LSX-180 Inst. Vent	SHUT AND CAPPED			
2CCP-V898	LSX-180 Inst. Root Isolation	OPEN			
2CCP-V900	LSX-180 Inst. Drain	SHUT AND CAPPED			
2CCP-V865	LS-181 Inst Root Isol	OPEN			
2CCP-V877	LS-181 Inst Vent	SHUT AND CAPPED			
2CCP-V866	LS-181 Inst Root Isol	OPEN			
2CCP-V956	LI127 Inst Root Isol	OPEN			
2CCP-V867	LS-181 Inst Drain	SHUT AND CAPPED			
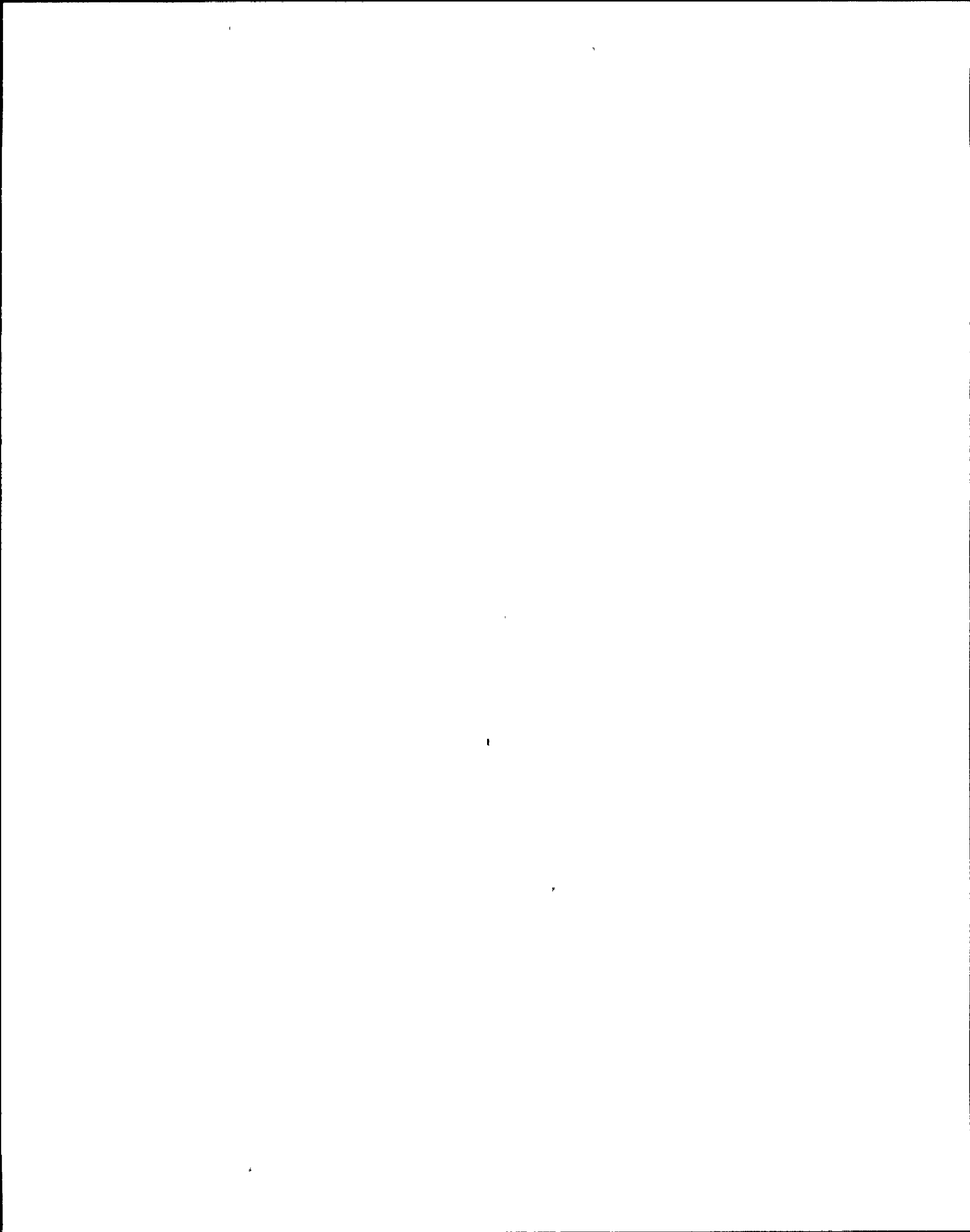
TABLE I   Page 61 of 68   TCN-16

VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V847	Expansion TK2 Drain	SHUT			
2CCP-V848	Expansion TK2 Outlet to System	OPEN			
2CCP-V896	PI162 Inst Root Isol	OPEN			
2CCP-V851	P2A Suction Isolation	OPEN			
2CCP-V849	P2B Suction Isolation	OPEN			
2CCP-V869	P2A Suction Line Drain	SHUT			
2CCP-V870	P2B Suction Line Drain	SHUT			
2CCP-V879	PI25A, PS25A Inst Root Isolation	OPEN			
2CCP-V880	PI25A, PS25A Inst Line Vent	SHUT AND CAPPED			
2CCP-V883	PI25B, PS25B Inst Root Isolation	OPEN			
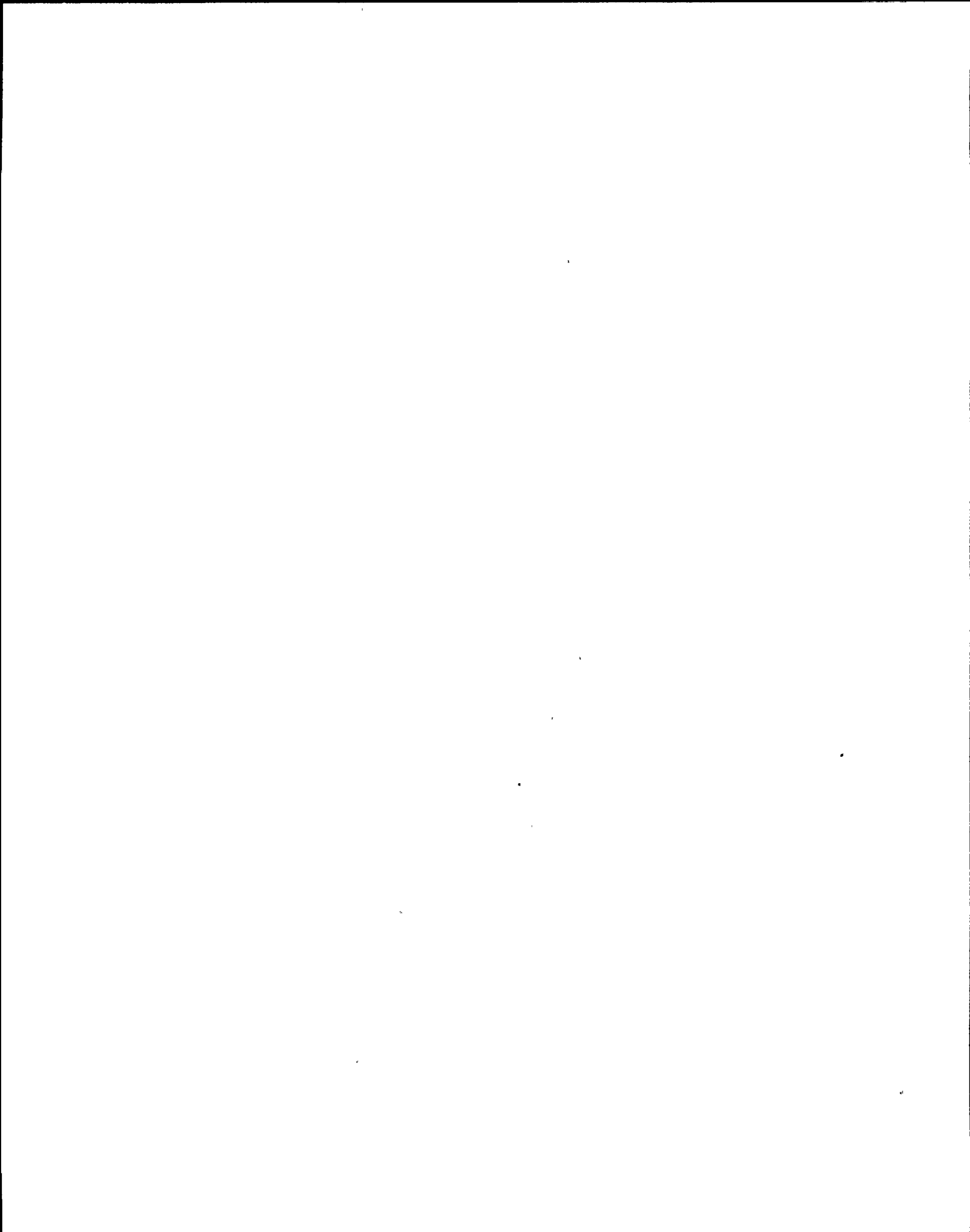
TABLE I   Page 62 of 69 |TCN-16

VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V884	PI25B, PS25B Inst Line Vent	SHUT AND CAPPED			
2CCP-V886	P2B Disch Line Test Connection	SHUT AND CAPPED			
2CCP-V863	P2B Disch Check	INSTALLED			
2CCP-V852	P2B Disch Isolation	OPEN			
2CCP-V882	P2A Disch Line Test Connection	SHUT AND CAPPED			
2CCP-V864	P2A Disch Check	INSTALLED			
2CCP-V850	P2A Disch Isolation	OPEN			
2CCP-V887	PI136 Inst Root Isol	OPEN			
2CCP-V881	P2A Vent	SHUT AND CAPPED			
2CCP-V871	P2A Drain	SHUT AND CAPPED			
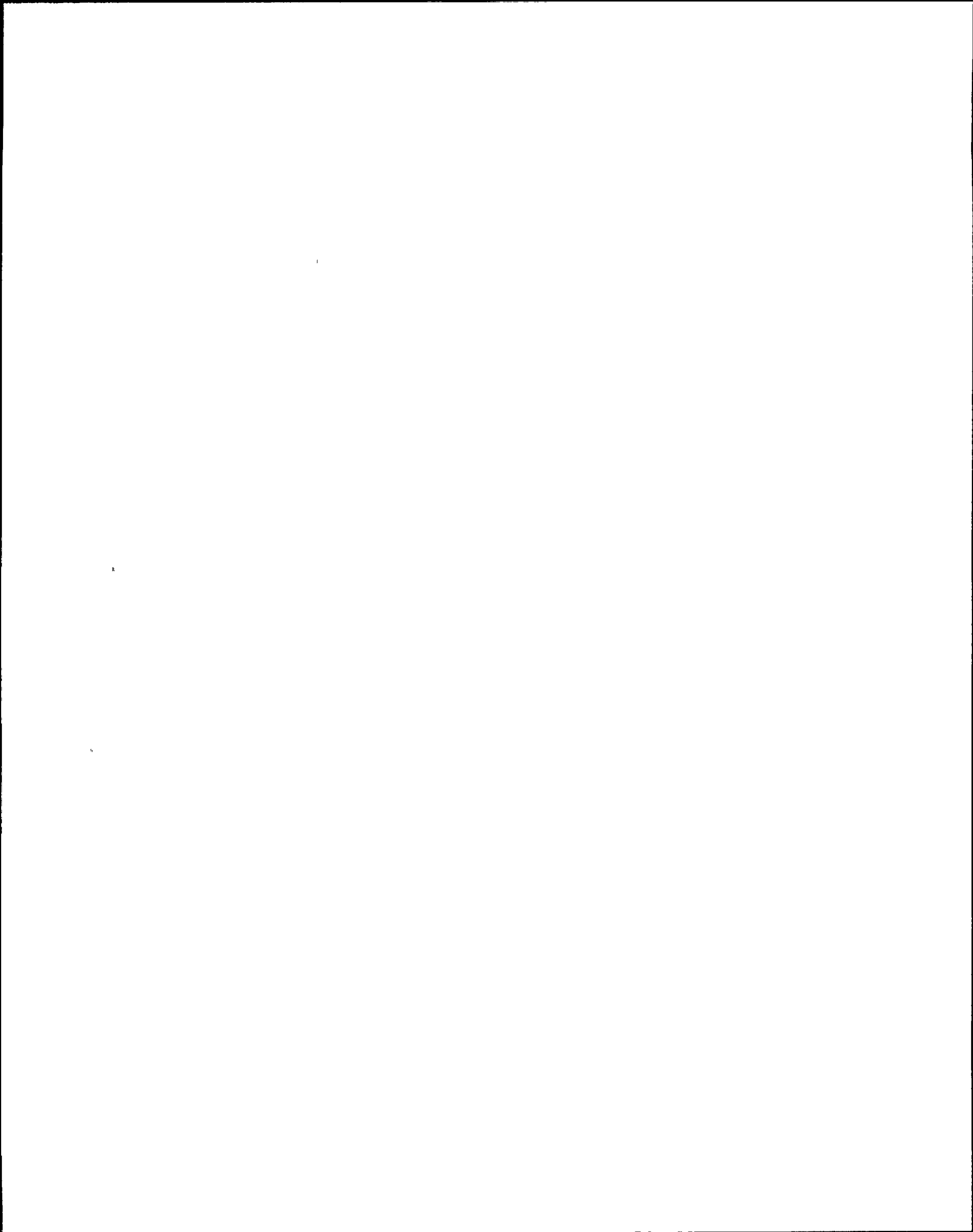
TABLE I   Page 63 of 69   · TCN-16

VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V885	P2B Vent	SHUT AND CAPPED			
2CCP-V872	P2B Drain	SHUT AND CAPPED			
2CCP-V888	FE128 Inst Root Isol	OPEN			
2CCP-V889	FE128 Inst Root Isol	OPEN			
2CCP-V895	PI161 Inst Root Isol	OPEN			
2CCP-V102	IAS Coolers 2C Inlet Isolation	OPEN			
2CCP-V135	IAS 2C After Cooler Inlet Isol	OPEN			
2CCP-V524	Inlet Isol for SOV-87C	OPEN			
2CCP-SOV87C	Inlet Isol for IAS-1C Intercooler	INSTALLED*			
2CCP-V525	Outlet Isol for SOV-87C	OPEN			

*No position indication, valve opens with associated compressor operation.
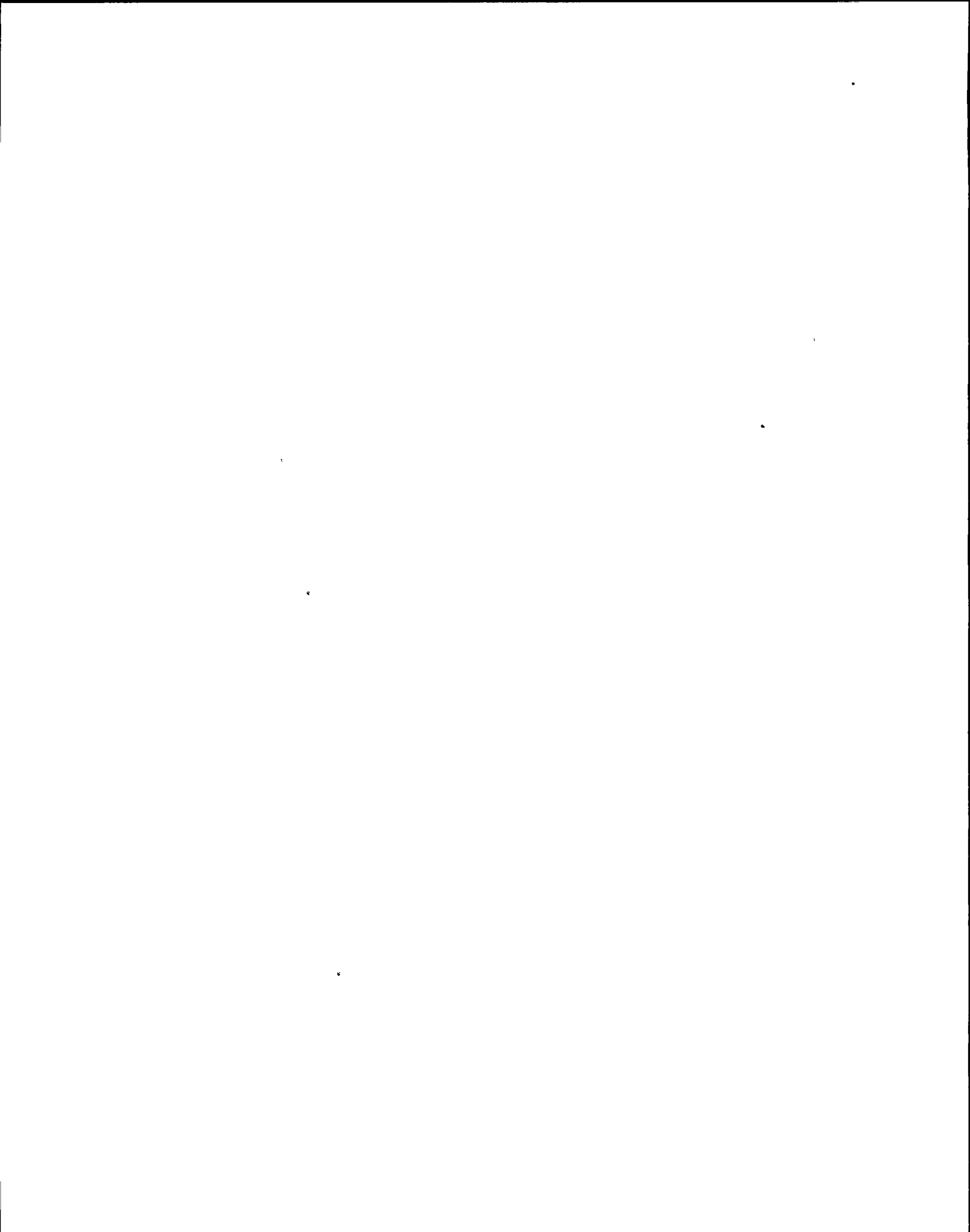
TABLE I   Page 64 of 69 |TCN-16

VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V93	IAS-1C Inlet Line Drain	SHUT AND CAPPED			
2CCP-V526	SOV-87C Bypass Line Isolation	SHUT			
2CCP-V655	IAS-C1C Jacket Clrs Bypass Line Isolation	THROTTLED			To Achieve ~ 110°F COMP, CLG WTR OUTLET 100% LOAD
2CCP-V656	IAS-C1C Jacket Clrs Inlet Isol	OPEN			
2CCP-V979	IAS C Clrs Outlet Vent	SHUT AND CAPPED			
2CCP-V310	IAS Coolers Outlet Line Drain	SHUT AND CAPPED			
2CCP-V976	IAS C Clrs Outlet Vent	SHUT AND CAPPED			
2CCP-RV88C	IAS Coolers Outlet Line Relief	NOT GAGGED			
2CCP-V240	IAS C Clrs Outlet Isol	OPEN			
2CCP-V104	IAS Coolers 2B Inlet Isolation	OPEN			
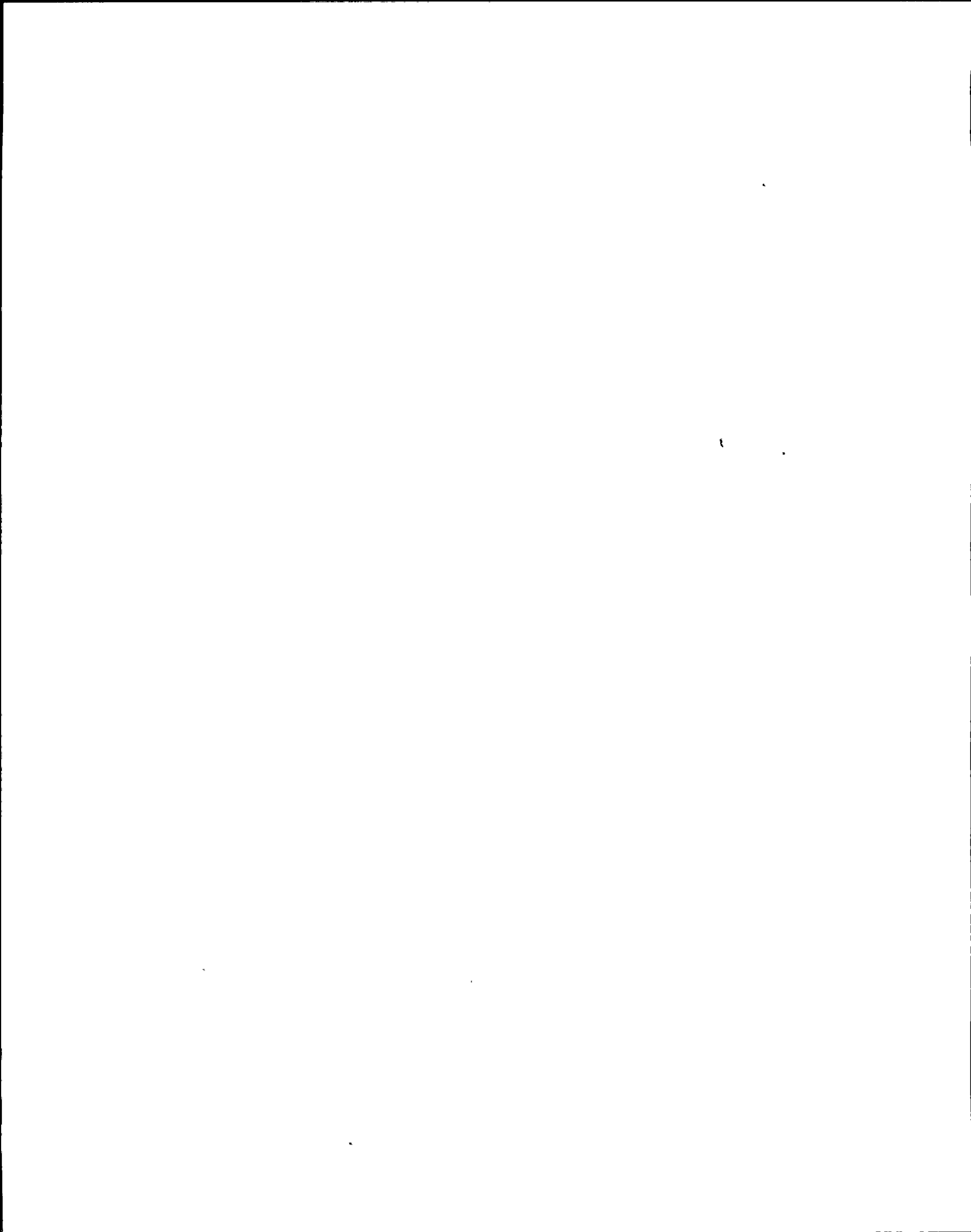
TABLE I   Page 65 of 69 |TCN-16

VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V136	Inlet Isol for IAS-2B After Cooler	OPEN			
2CCP-V521	Inlet Isol for SOV-87B	OPEN			
2CCP-SOV87B	Inlet Isol for IAS-1B Inter Cooler	INSTALLED*			
2CCP-V522	Outlet Isol for SOV-87B	OPEN			
2CCP-V210	IAS-1B Inlet Line Drain	SHUT AND CAPPED			
2CCP-V523	SOV-87B Bypass Line Isolation	SHUT			
2CCP-V653	IAS-C1B Jacket Clrs Bypass Line Isol	THROTTLED			To Achieve ~ 110°F COMP, CLG WTR OUTLET 100% LOAD
2CCP-V654	IAS-C1B Jacket Coolers Inlet Isol	OPEN			
2CCP-V978	IAS B Clrs Outlet Vent	SHUT AND CAPPED			
2CCP-V309	IAS-B Clrs Outlet Line Drain	SHUT AND CAPPED			

*No position indication, valve opens with associated compressor operation.
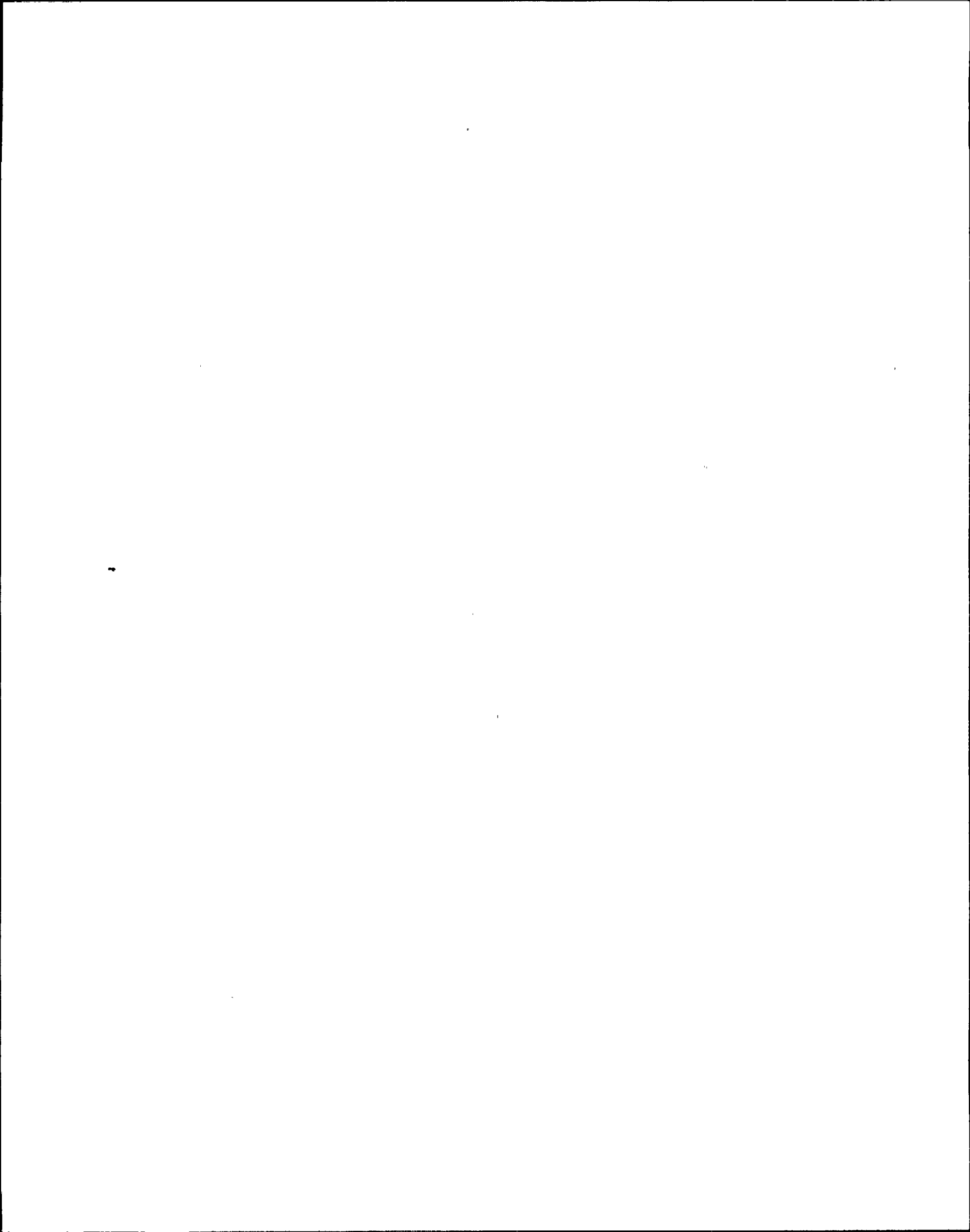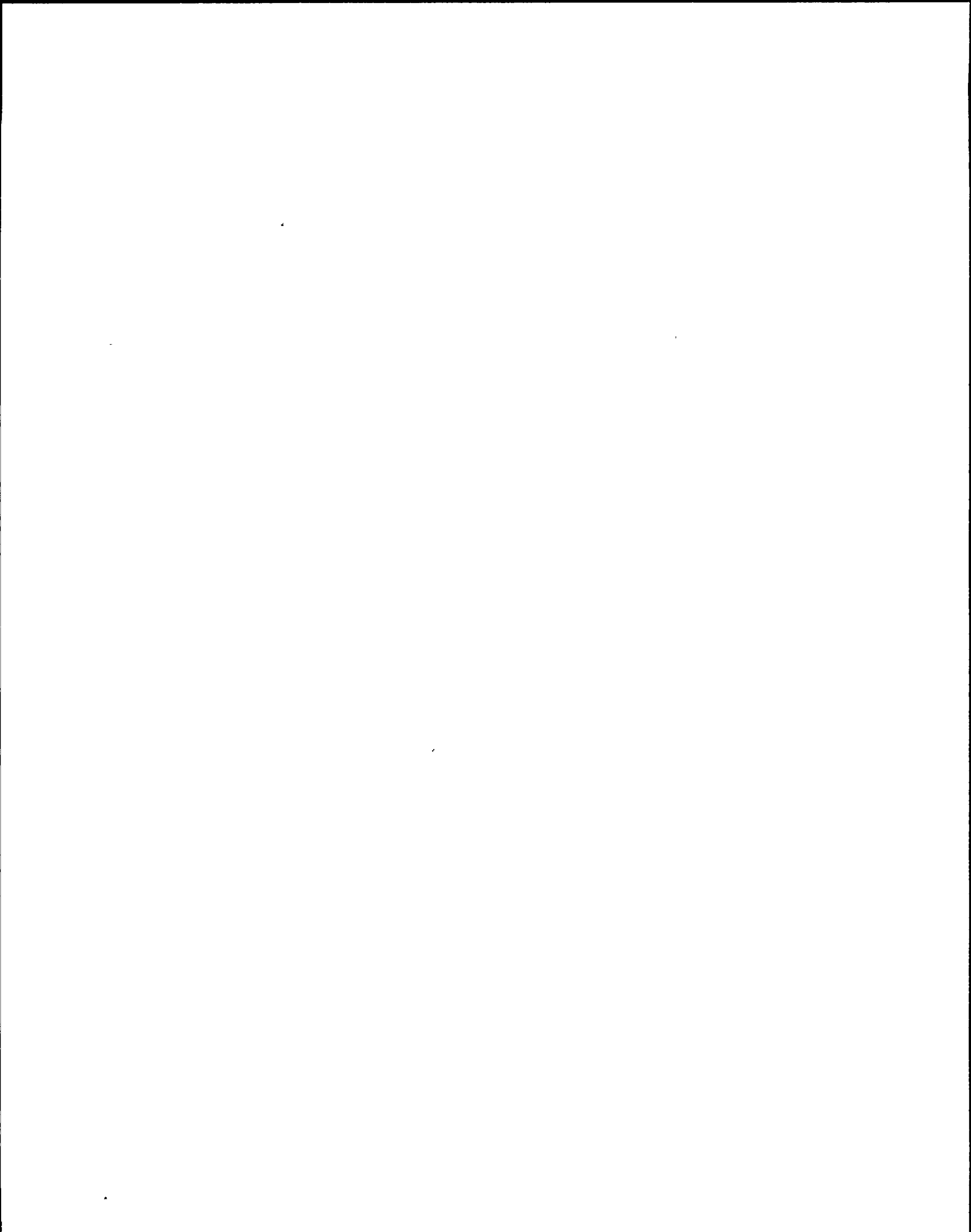
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VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V975	IAS B Clrs Outlet Vent	SHUT AND CAPPED			
2CCP-RV88B	IAS-C1B Relief	NOT GAGGED			
2CCP-V241	IAS-B Clrs Outlet Isol	OPEN			
2CCP-V105	IAS Clrs 1A, 2A Inlet Isol	OPEN			
2CCP-V138	IAS-2A After Cooler Inlet Isol	OPEN			
2CCP-V518	Inlet Isol for SOV-87A	OPEN			
2CCP-SOV87A	Inlet Isol for IAS-1A Intercooler	INSTALLED*			
2CCP-V519	Outlet Isol for SOV-87A	OPEN			
2CCP-V211	IAS-1A Inlet Line Drain	SHUT AND CAPPED			
2CCP-V520	SOV-87A Bypass Line Isol	SHUT			

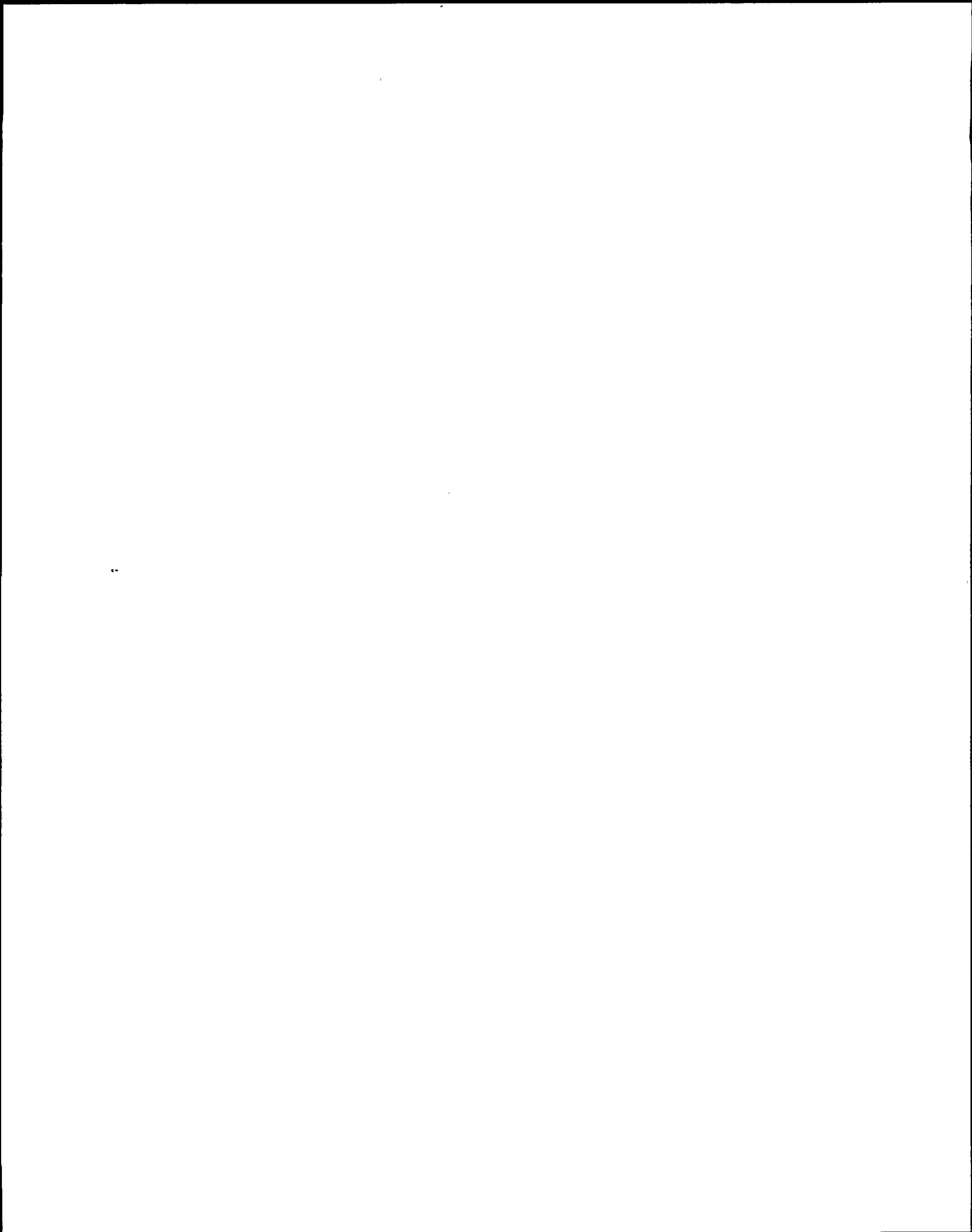*No position indication, valve opens with associated compressor operation.
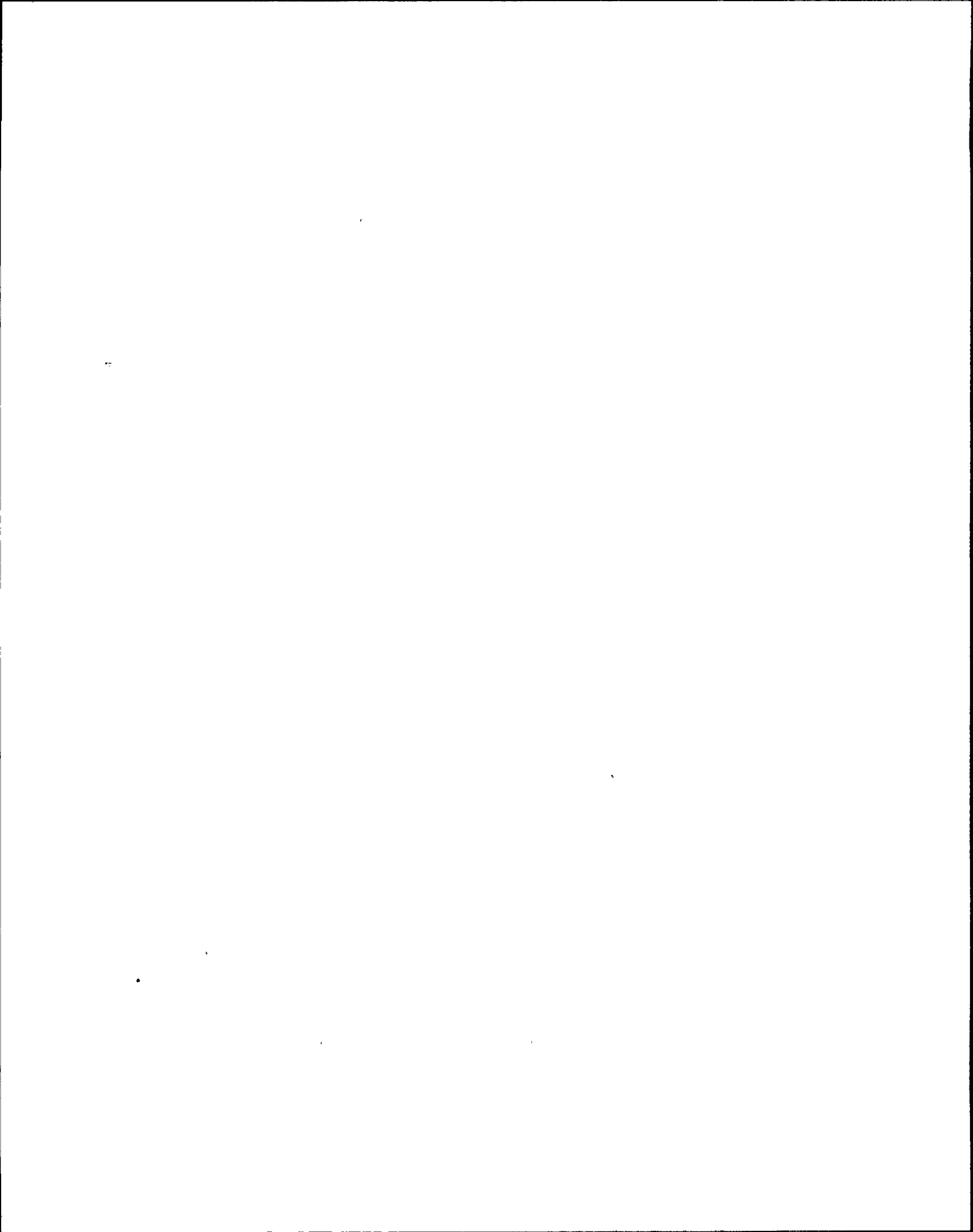
VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V651	IAS-C1A Jacket Clrs Bypass Line Isol	THROTTLED			TO ACHIEVE ~ 110°F COMP. CLG WTR OUTLET 100% LOAD
2CCP-V652	IAS-C1A Jacket Coolers Inlet Isol	OPEN			
2CCP-V977	IAS A Clrs Outlet Vent	SHUT AND CAPPED			
2CCP-V308	IAS A Clrs Outlet Line Drain	SHUT AND CAPPED			
2CCP-V974	IAS A Clrs Outlet Line Vent	SHUT AND CAPPED			
2CCP-RV88A	IAS-A Clrs Outlet Line Relief	NOT GAGGED			
2CCP-V247	IAS-A Clrs Outlet Isol	OPEN			
2CCP-V894	PI160 Inst Root Isol	OPEN			
2CCP-V857	HX2A Cooling Wtr Inlet Isol	OPEN			
2CCP-V858	HX2B Cooling Wtr Inlet Isol	SHUT			
2CCP-V859	HX2A Cooling Wtr Outlet Isol	THROTTLED			3RD PIN FROM FULL OPEN

TABLE I   Page 68 of 69   TCN-16

VALVE LINEUP

VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V860	HX2B Cooling Wtr Outlet Isol	SHUT			
2CCP-RV59A	HX2A Tubeside Relief	NOT GAGGED			
2CCP-RV59B	HX2B Tubeside Relief	NOT GAGGED			
2CCP-V853	HX2B Inlet Isol	SHUT			
2CCP-V855	HX2A Inlet Isol	OPEN			
2CCP-V854	HX2B Outlet Isol	SHUT			
2CCP-V856	HX2A Outlet Isol	OPEN			
2CCP-V892	HX2A Tubeside Vent	SHUT AND CAPPED			
2CCP-V972	HX2A Shellside Automatic Vent	INSTALLED			
2CCP-V873	HX2A Shellside Drain	SHUT AND CAPPED			

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VALVE LINEUP

| VALVE NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2CCP-V874	HX2A Tubeside Drain	SHUT AND CAPPED			
2CCP-V890	HX2B Tubeside Vent	SHUT AND CAPPED			
2CCP-V973	HX2B Shellside Automatic Vent	INSTALLED			
2CCP-V875	HX2B Shellside Drain	SHUT AND CAPPED			
2CCP-V876	HX2B Tubeside Drain	SHUT AND CAPPED			
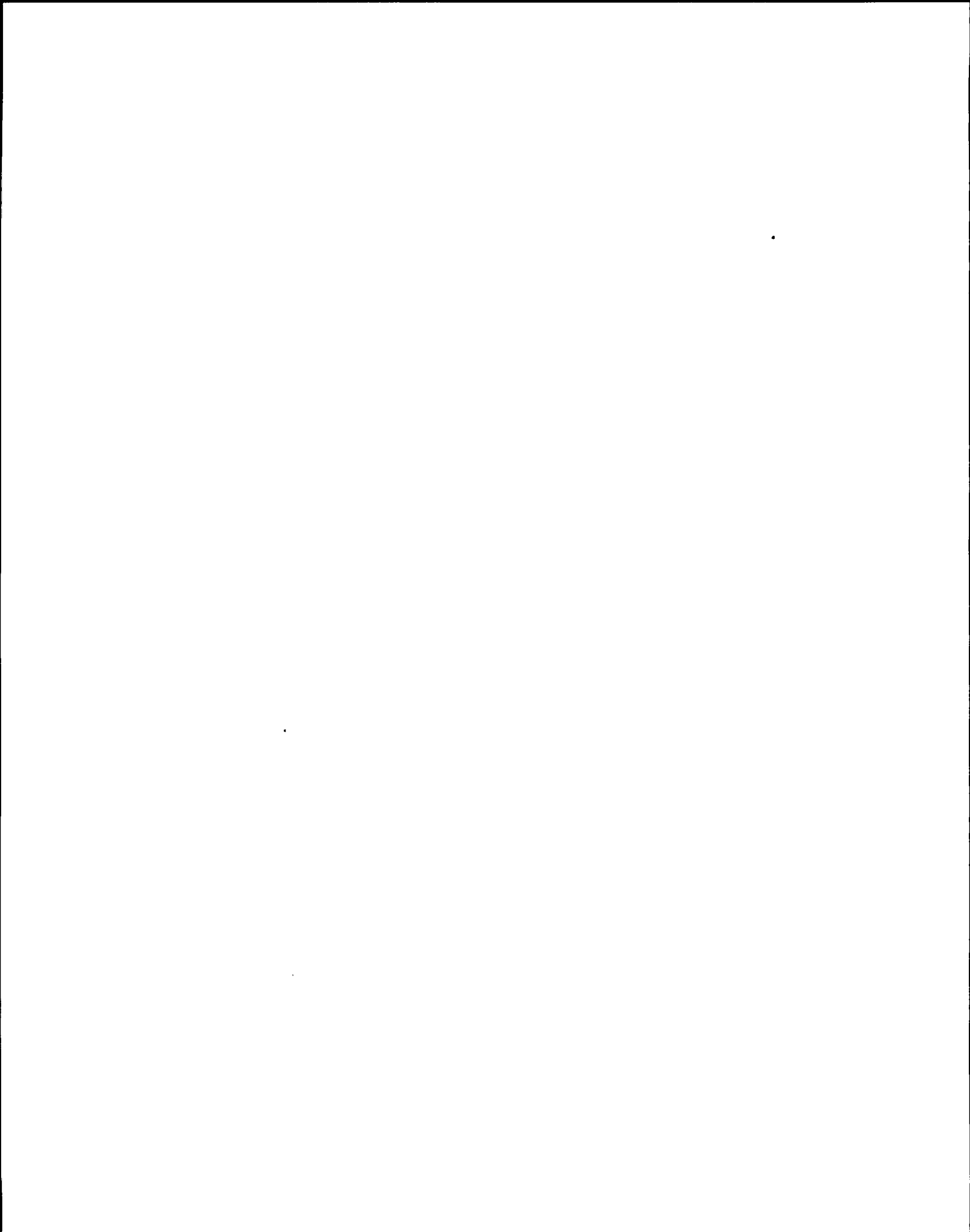
TABLE II .

SYSTEM POWER SUPPLY LINEUP

COMPONENT NO.	COMPONENT DESCRIPTION	POWER SUPPLY		NORMAL POSITION	ACTUAL POSITION	INITIALS/ DATE	REMARKS
		Bus Number –	Cubical/ Breaker				
2CCP-MOV1A	RBCLC To DW Cooler UC1A Block Valve	2NHS-MCC011	7-B	ON			
2CCP-MOV1B	RBCLC To DW Cooler UC1B Block Valve	2NHS-MCC012	5-A	ON			
2CCP-MOV1C	RBCLC To DW Cooler UC1C Block Valve	2NHS-MCC011	6-A	ON			
2CCP-MOV1D	RBCLC To DW Cooler UC1D Block Valve	2NHS-MCC012	5-B	ON			
2CCP-MOV2A	RBCLC To DW Cooler UC2A Block Valve	2NHS-MCC011	6-B	ON			
2CCP-MOV2B	RBCLC To DW Cooler UC2B Block Valve	2NHS-MCC012	5-C	ON			
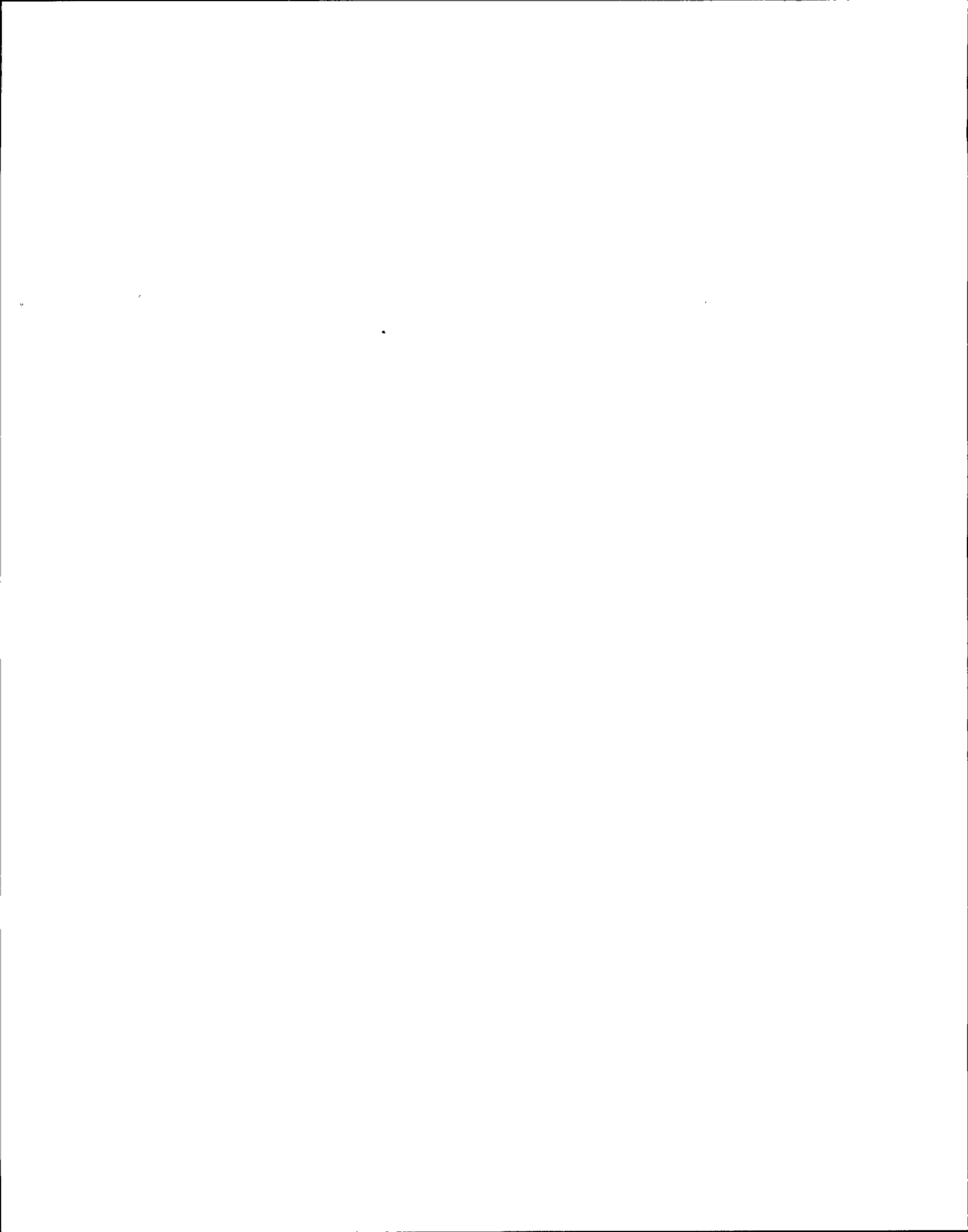
TABLE II

SYSTEM POWER SUPPLY LINEUP

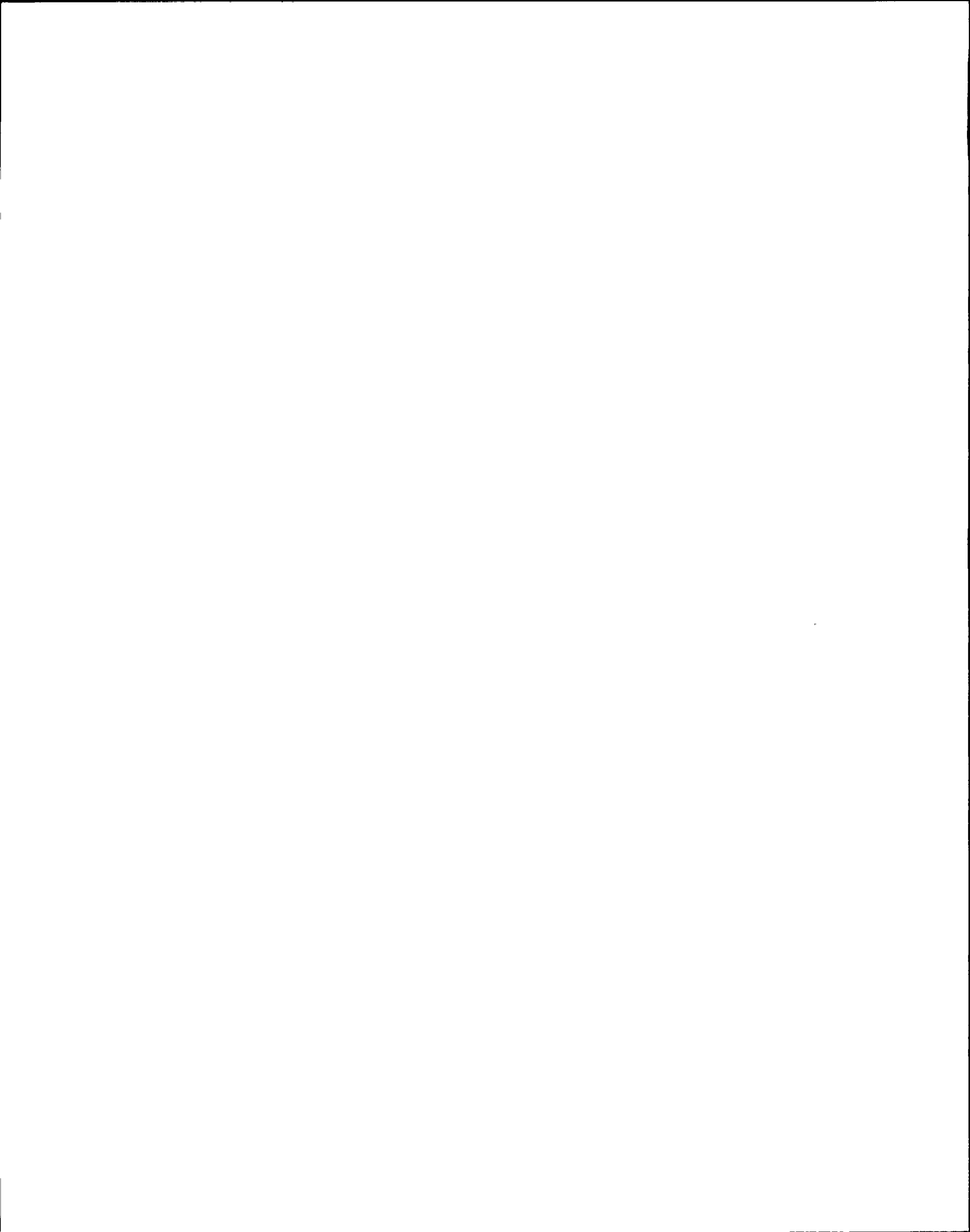| COMPONENT NO.	COMPONENT DESCRIPTION	POWER SUPPLY Bus Number	– Cubical/ Breaker	NORMAL POSITION	ACTUAL POSITION	INITIALS/ DATE	REMARKS
2CCP-MOV2C	RBCLC To DW Cooler UC2C Block Valve	2NHS-MCC011	6-C	ON			
2CCP-MOV2D	RBCLC To DW Cooler UC2D Block Valve	2NHS-MCC012	6-A	ON			
2CCP-MOV3A	RBCLC To DW Cooler UC3A Block Valve	2NHS-MCC011	7-A	ON			
2CCP-MOV3B	RBCLC To DW Cooler UC3B Block Valve	2NHS-MCC012	6-B	ON			
2CCP* MOV14A	RBCLCW to SFP Cooling Heat Exch A	2EHS*MCC103A	4-A	ON			
2CCP* MOV14B	RBCLCW to SFP Cooling Heat Exch B	2EHS*MCC303B	4-A	ON			

TABLE II .

SYSTEM POWER SUPPLY LINEUP

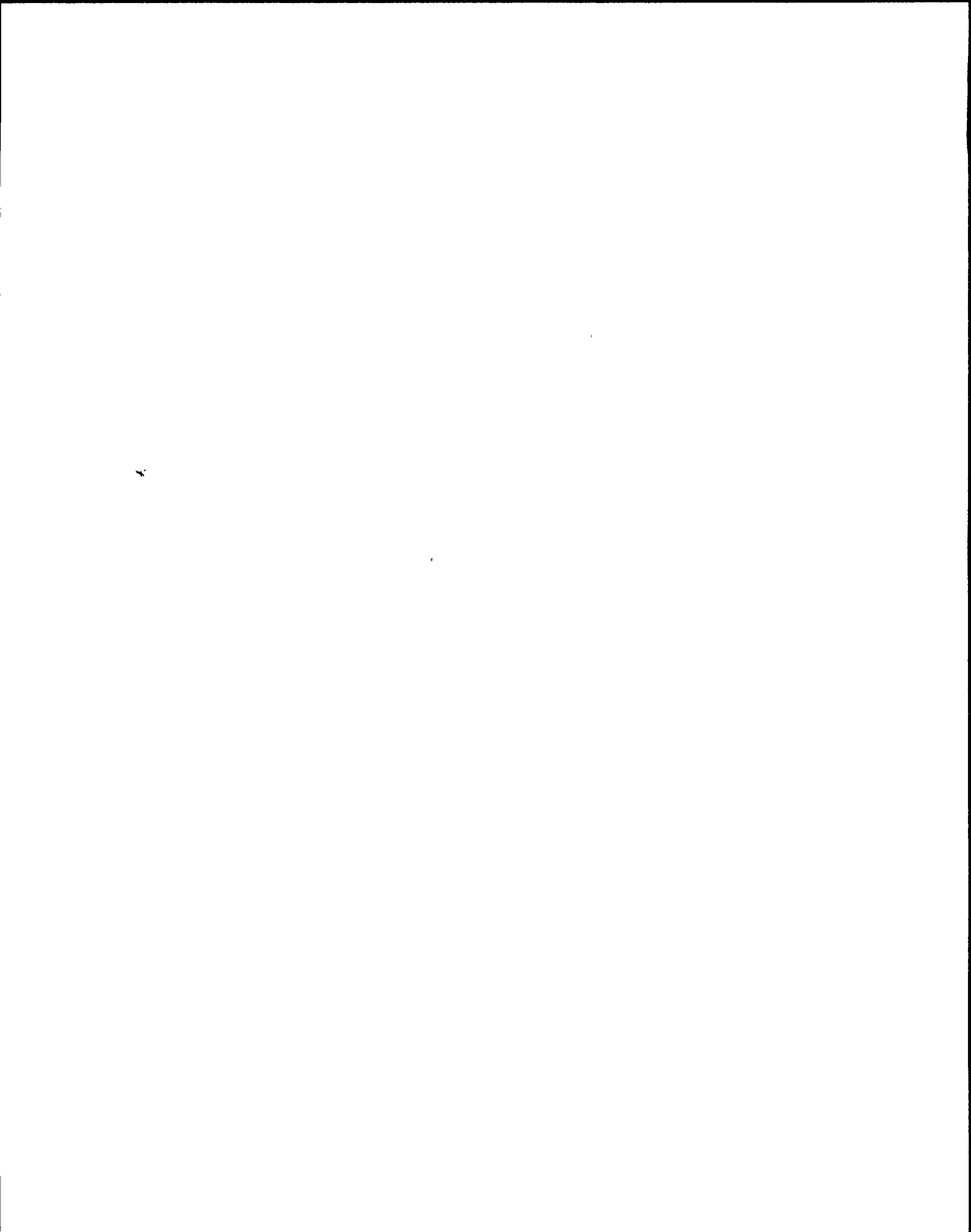| COMPONENT NO.	COMPONENT DESCRIPTION	POWER SUPPLY Bus Number	- Cubical/ Breaker	NORMAL POSITION	ACTUAL POSITION	INITIALS/ DATE	REMARKS
2CCP* MOV18A	RBCLC From SFP Cooling Heat Exch A	2EHS*MCC103A	4-B	ON			
2CCP* MOV18B	RBCLC From SFP Cooling Heat Exch B	2EHS*MCC303B	4-B	ON			
2CCP* MOV15A	RBCLC From Recirc Pump 1A Coolers	2EHS*MCC103A	5-C	ON			
2CCP* MOV15B	RBCLC From Recirc Pump 1B Coolers	2EHS*MCC103A	5-D	ON			
2CCP* MOV16A	RBCLC From Recirc Pump 1A Coolers	2EHS*MCC303B	5-A	ON			
2CCP* MOV16B	RBCLC From Recirc Pump 1B Coolers	2EHS*MCC303B	5-B	ON			

TABLE II

SYSTEM POWER SUPPLY LINEUP

COMPONENT NO.	COMPONENT DESCRIPTION	POWER SUPPLY Bus Number – Cubical/ Breaker	NORMAL POSITION	ACTUAL POSITION	INITIALS/ DATE	REMARKS
2CCP* MOV17A	RBCLC To Recirc Pump 1A Coolers	2EHS*MCC103A	5–A	ON		
2CCP* MOV17B	RBCLC To Recirc Pump 1B Coolers	2EHS*MCC103A	5–B	ON		
2CCP– CAB131	CCP Radiation Monitor (WCS NRHX)	2NJS–PNL201	14	ON		

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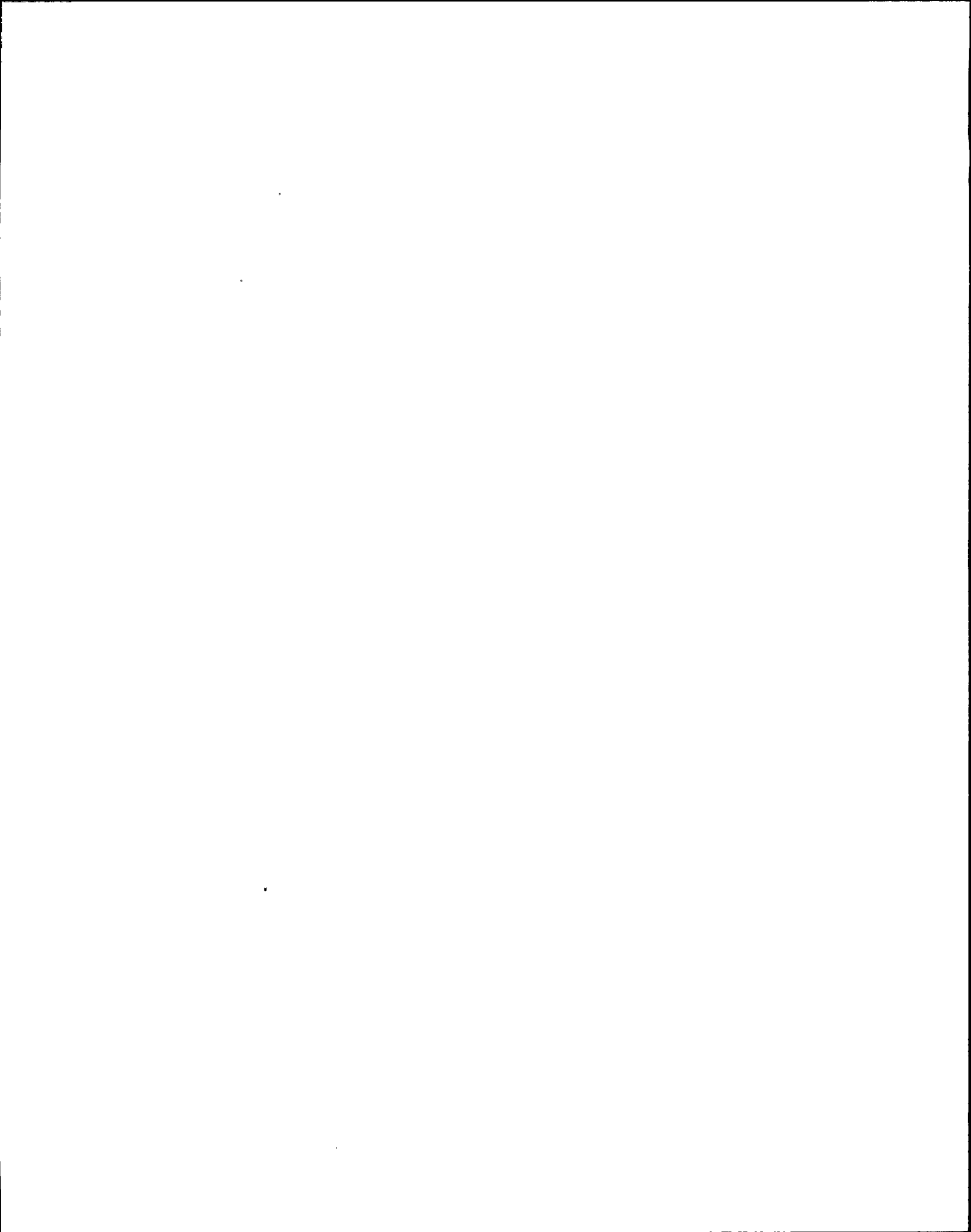
TABLE II .

SYSTEM POWER SUPPLY LINEUP

COMPONENT NO.	COMPONENT DESCRIPTION	POWER SUPPLY Bus Number – Cubical/Breaker		NORMAL POSITION	ACTUAL POSITION	INITIALS/ DATE	REMARKS
2CCP* MOV94A	RBCLC To Recirc Pump 1A Coolers	2EHS*MCC303B	10-A	ON			
2CCP* MOV94B	RBCLC To Recirc Pump 1B Coolers	2EHS*MCC303B	10-B	ON			
2CCP* MOV122	RBCLC From DW Coolers Inbd IV	2EHS*MCC303B	5-C	ON			
2CCP* MOV124	RBCLC From DW Coolers Outbd IV	2EHS*MCC103A	6-A	ON			
2CCP* MOV265	RBCLC To DW Coolers Outbd IV	2EHS*MCC103A	6-B	ON			
2CCP* MOV273	RBCLC To DW Coolers Inbd IV	2EHS*MCC303B	10-C	ON			
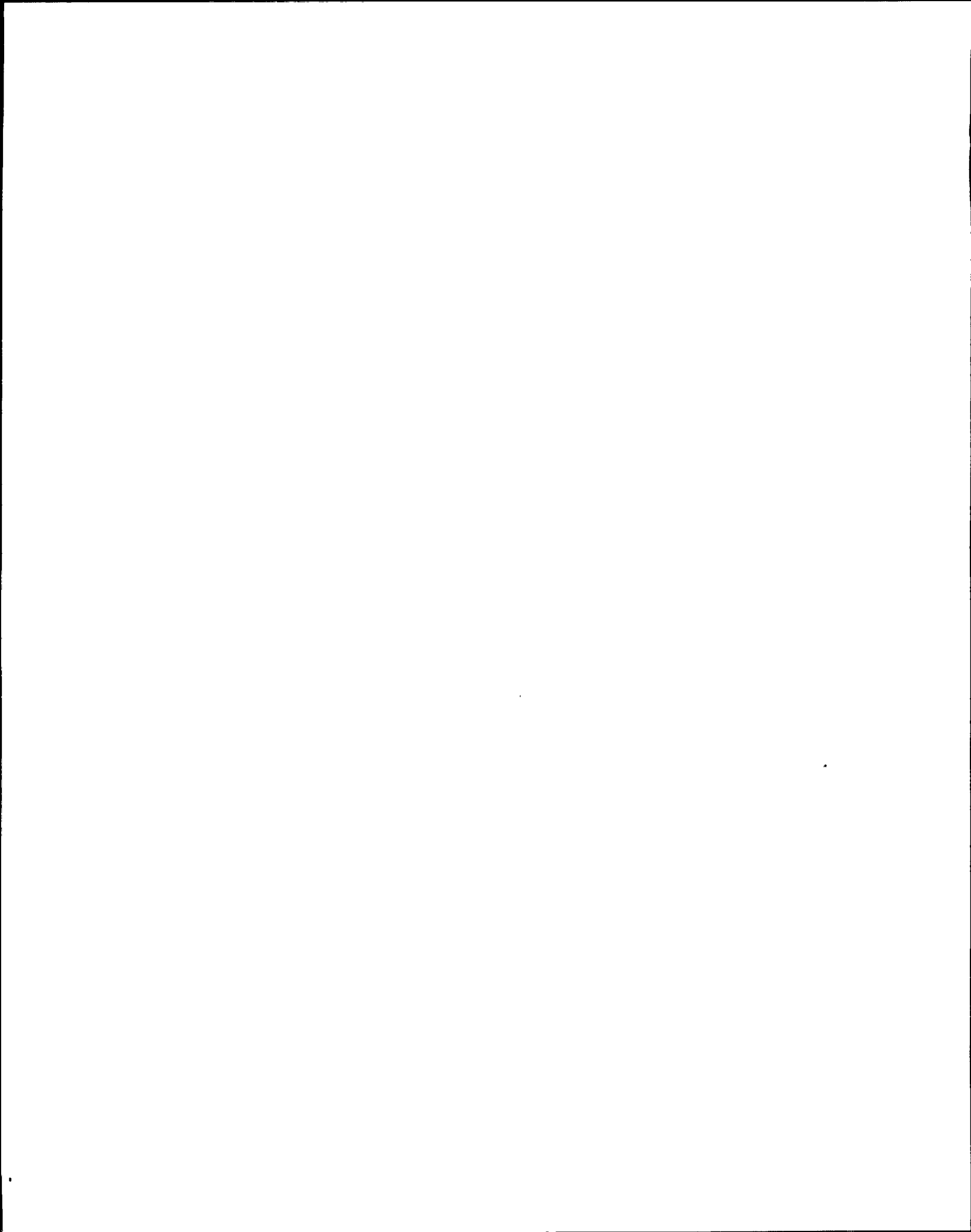
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TABLE II

SYSTEM POWER SUPPLY LINEUP

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COMPONENT NO.	COMPONENT DESCRIPTION	POWER SUPPLY Bus Number	— Cubical/ Breaker	NORMAL POSITION	ACTUAL POSITION	INITIALS/ DATE	REMARKS
2CCP-P1A	RBCLC Pump 1A	2NNS-SWG012	5	Racked In			
2CCP-P1B	RBCLC Pump 1B	2NNS-SWG015	4	Racked In			
2CCP-P1C	RBCLC Pump 1C	2NNS-SWG014	9	Racked In			
2CCP-P2A	RBCLC Cooling Pump 2A	2NHS-MCC011	9-E	ON			
2CCP-P2B	RBCLC Cooling Pump 2B	2NHS-MCC012	9-D	ON			
2CCP-P3A	RBCLC Booster Pump 3A	2NNS-SWG013	9	Racked In			

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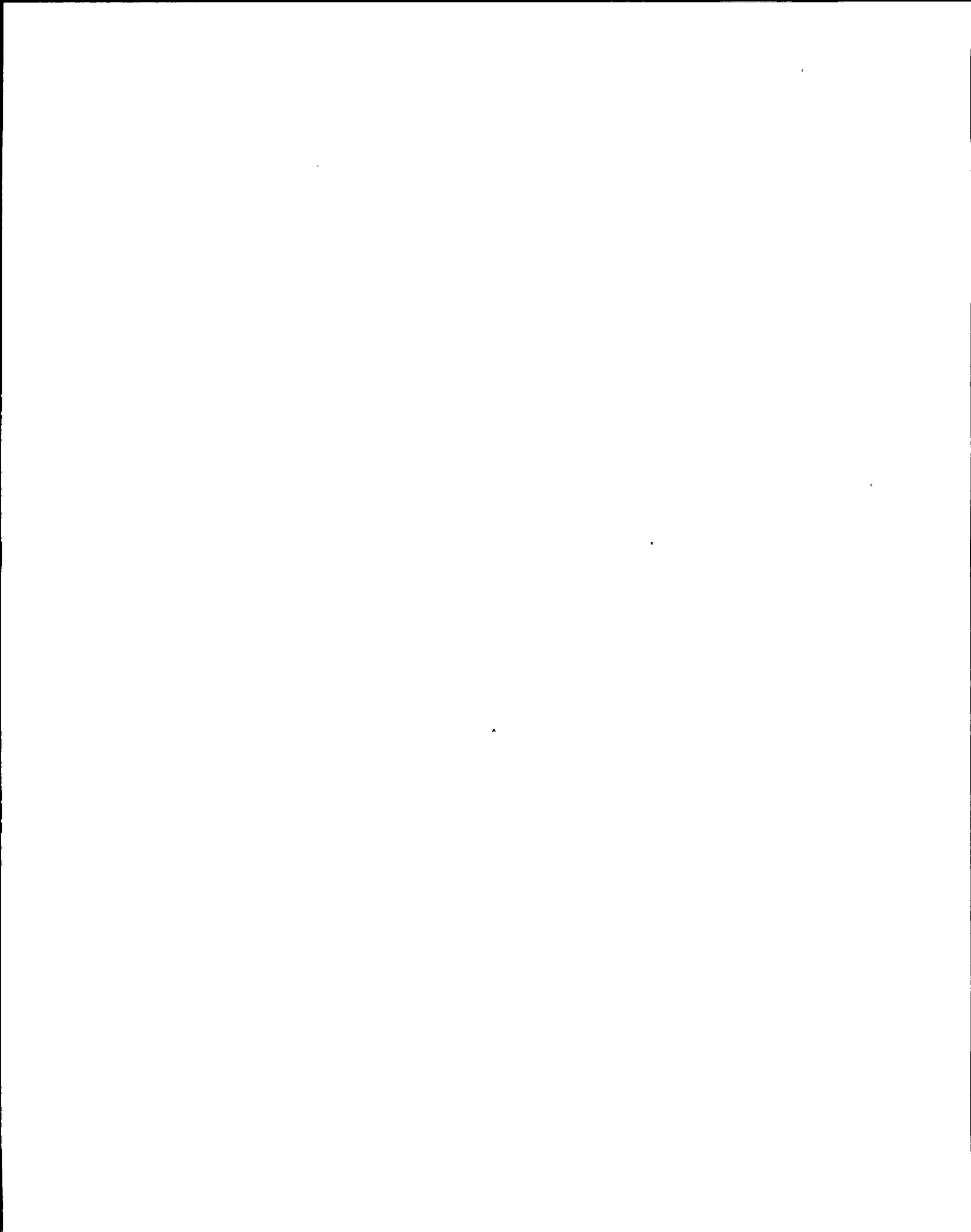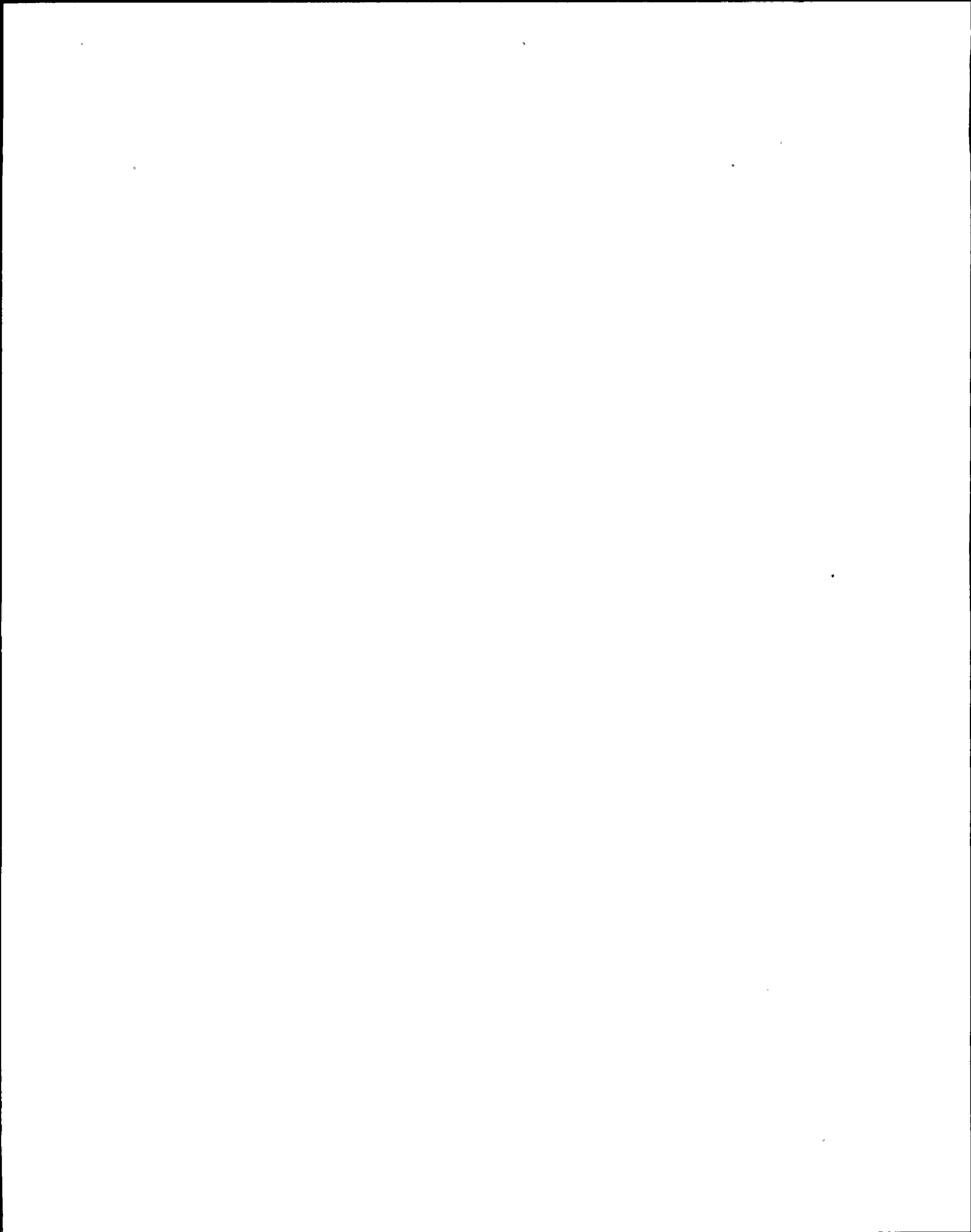N2-OP-13 -129   June 1989

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TABLE II

SYSTEM POWER SUPPLY LINEUP

COMPONENT NO.	COMPONENT DESCRIPTION	POWER SUPPLY		NORMAL POSITION	ACTUAL POSITION	INITIALS/ DATE	REMARKS
		Bus Number	Cubical/ Breaker				
2CCP-P3B	RBCLC Booster Pump 3B	2NNS-SWG015	6	Racked In			
2CCP-P3C	RBCLC Booster Pump 3C	2NNS-SWG014	6	Racked In			
Circuit 2CCPA08	Div I Inop Indication Ckt	2SCM* PNL101A	5	On			
Circuit 2CCPA07	Div I Inop Alarm Ckt	2SCM* PNL101A	31	On			
2CCP*-A0V37A 2CCP*-A0V38A	RBCLC To/From RHR P1A Seal & Bearing Cooler	2SCM* PNL102A	15	On			
Circuit 2CCPB07	Div II Inop Alarm Ckt	2SCM* PNL301B	6	On			
Circuit 2CCPB08	Div II Inop Indication Ckt	2SCM* PNL301B	9	On			

TABLE II .

SYSTEM POWER SUPPLY LINEUP

COMPONENT NO.	COMPONENT DESCRIPTION	POWER SUPPLY Bus Number -	Cubical/ Breaker	NORMAL POSITION	ACTUAL POSITION	INITIALS/ DATE	REMARKS
2CCP*-AOV37B 2CCP*-AOV38B	RBCLC To/From RHR P1B/P1C Seal & Bearing Cooler	2SCM* PNL302B	14	On			
2CCP-AOV120	RBCLC Expansion Tank TK 1 Level Control	2SCI-PNLB101	18	On			
2CCP-AOV180	RBCLC Expansion Tank TK 2 Level Control	2SCI-PNLB102	9	On			
2CCP-CIT132	CCP Pump Suct Conductivity	2SCI-PNLC104	6	On			
2CCP-AIT133	CCP Pump Suct pH	2SCI-PNLC104	7	On			
2CCP-H1A	P1A Heater	2SCA-PNL201	1	On			
2CCP-H1B	P1B Heater	2SCA-PNL201	4	On			
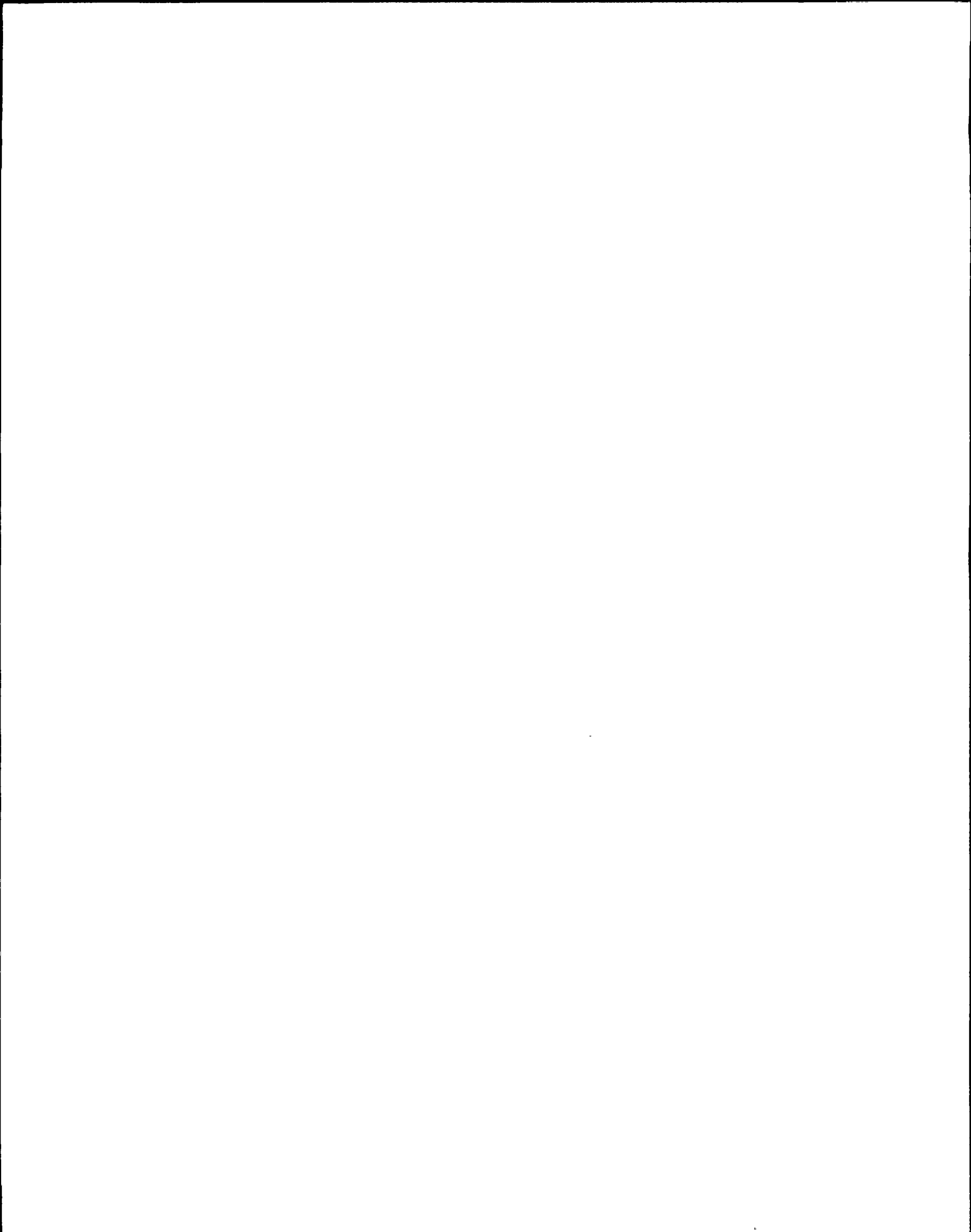
TABLE II

SYSTEM POWER SUPPLY LINEUP

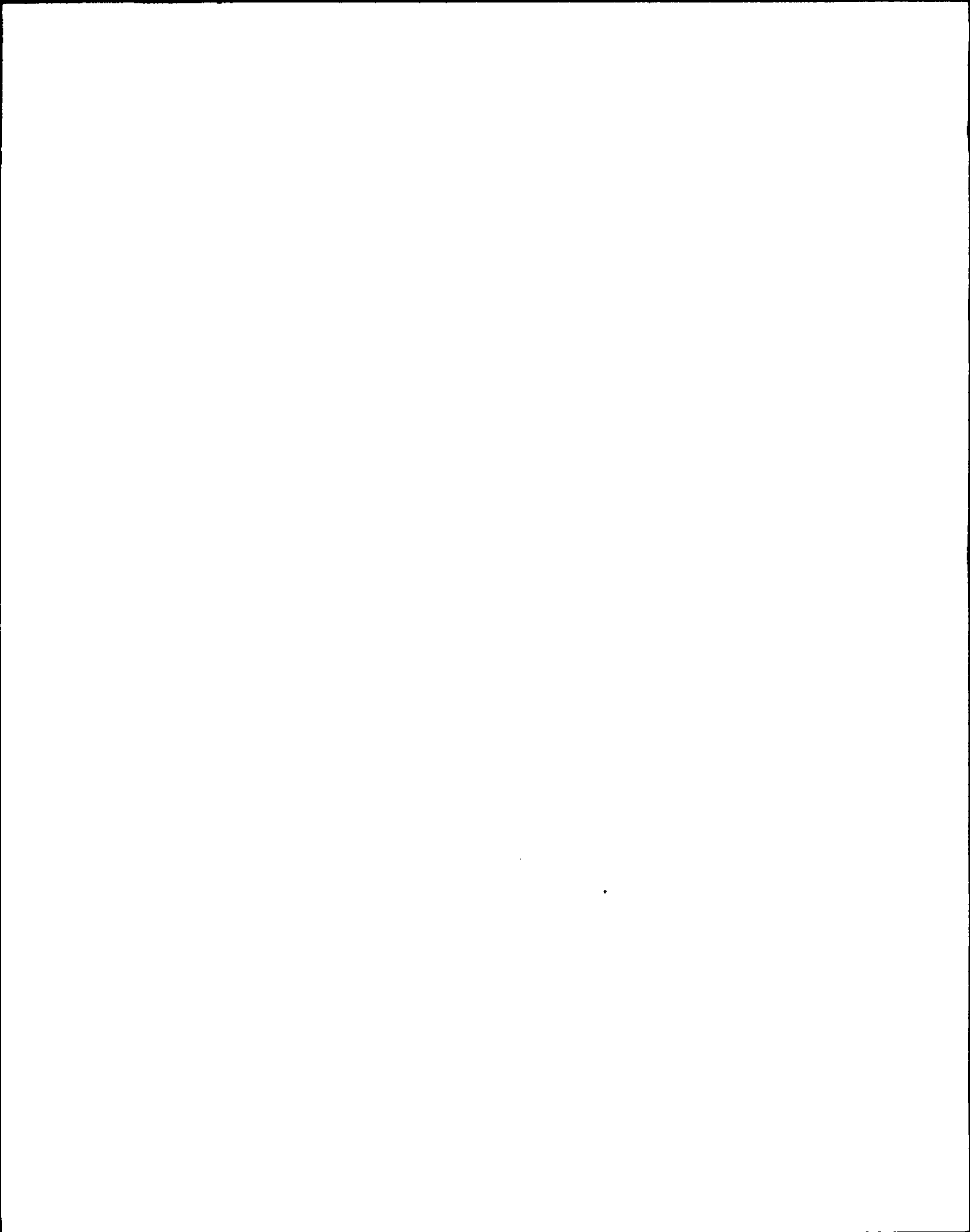| COMPONENT NO.	COMPONENT DESCRIPTION	POWER SUPPLY Bus Number	— Cubical/ Breaker	NORMAL POSITION	ACTUAL POSITION	INITIALS/ DATE	REMARKS
2CCP-H1C	P1C Heater	2SCA-PNL201	2	On			
2CCP-H3A	P3A Heater	2SCA-PNL406	17	On			
2CCP-H3B	P3B Heater	2SCA-PNL406	18	On			
2CCP-H3C	P3C Heater	2SCA-PNL406	19	On			

TABLE III .

CONTROLLER LINEUP

COMPONENT NO.	COMPONENT LOCATION	CONTROLLER POSITION	CONTROLLER SETPOINT	INITIALS/ DATE	REMARKS
2CCP–TIK108	P601	AUTO	85°		
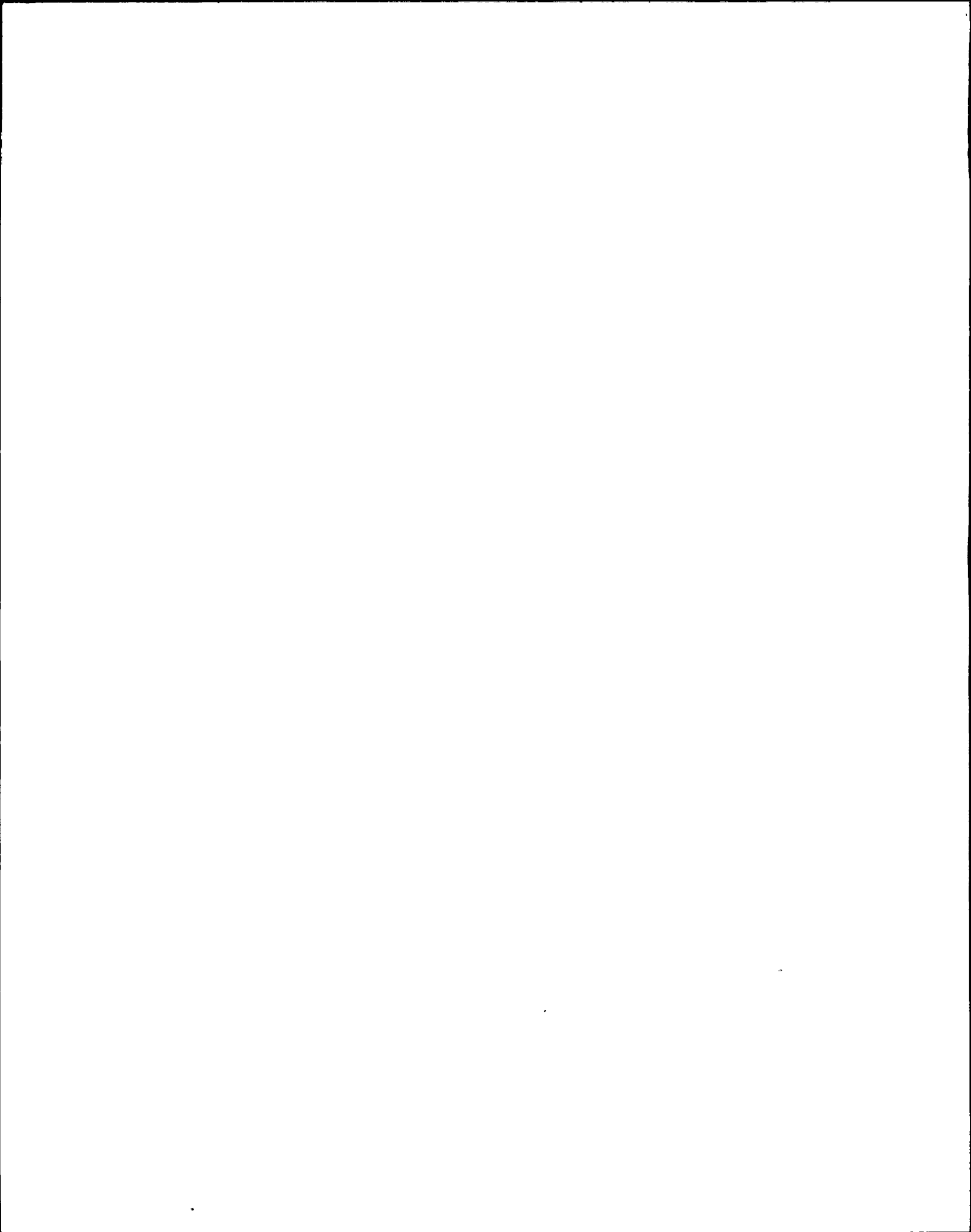
ATTACHMENT 1

REACTOR BUILDING CLOSED LOOP COOLING LOADS

1. RWCU Non-Regenerative Heat Exchanger

2. ADS Air Compressor

3. Instrument Air Compressor Cooling Heat Exchangers

4. Drywell Coolers

5. Reactor Recirc Pump seal coolers, motor winding coolers, and motor bearing coolers

6. Reactor Plant Sampling Coolers

7. Reactor Building Equipment Drain Coolers

*8. RHR Pump seal coolers

*9. Spent Fuel Pool Heat Exchangers

10. Control Rod Drive Pump seal coolers and speed increasers

11. Drywell Equipment Drain Cooler

12. RWCU Pump bearings, coolers, seal jackets, and pedestals

13. Reactor recirculation sample cooler

14. RHR sample coolers

*Cooling can be supplied from Service Water, per this procedure.