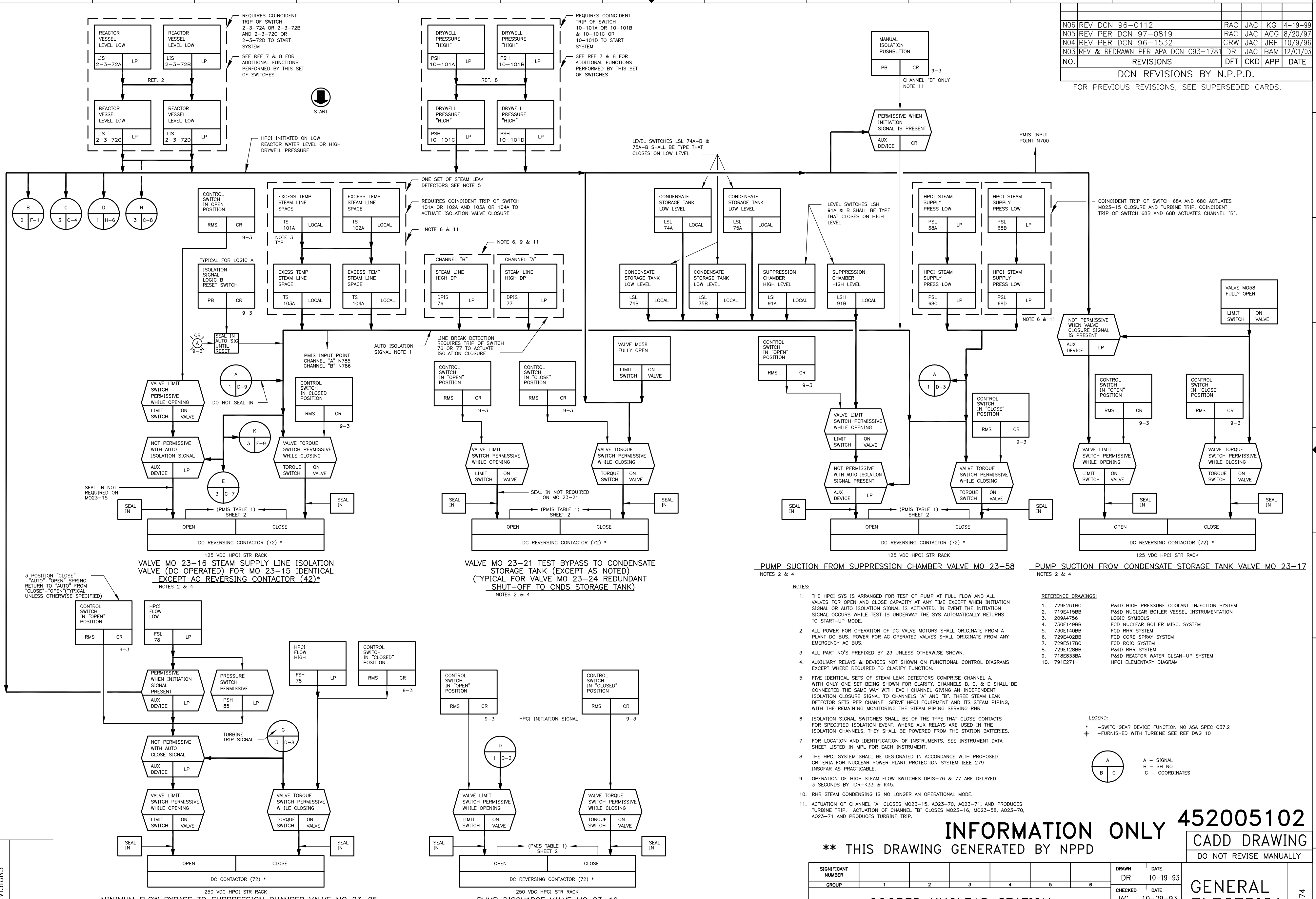


N06	REV DCN 96-0112	RAC	JAC	KG	4-19-99
N05	REV PER DCN 97-0819	RAC	JAC	ACG	8/20/97
N04	REV PER DCN 96-1532	CRW	JAC	JRF	10/9/96
N03	REV & REDRAWN PER APA DCN C93-1781	DR	JAC	BAM	12/01/03
NO.	REVISIONS	DFT	CKD	APP	DATE

DCN REVISIONS BY N.P.P.D.  
FOR PREVIOUS REVISIONS, SEE SUPERSEDED CARDS.



- NOTES:**
- THE HPCI SYS IS ARRANGED FOR TEST OF PUMP AT FULL FLOW AND ALL VALVES FOR OPEN AND CLOSE CAPACITY AT ANY TIME EXCEPT WHEN INITIATION SIGNAL OR AUTO ISOLATION SIGNAL IS ACTIVATED. IN EVENT THE INITIATION SIGNAL OCCURS WHILE TEST IS UNDERWAY THE SYS AUTOMATICALLY RETURNS TO START-UP MODE.
  - ALL POWER FOR OPERATION OF DC VALVE MOTORS SHALL ORIGINATE FROM A PLANT DC BUS. POWER FOR AC OPERATED VALVES SHALL ORIGINATE FROM ANY EMERGENCY AC BUS.
  - ALL PART NO'S PREFIXED BY 23 UNLESS OTHERWISE SHOWN.
  - AUXILIARY RELAYS & DEVICES NOT SHOWN ON FUNCTIONAL CONTROL DIAGRAMS EXCEPT WHERE REQUIRED TO CLARIFY FUNCTION.
  - FIVE IDENTICAL SETS OF STEAM LEAK DETECTORS COMPRISE CHANNEL A, WITH ONLY ONE SET BEING SHOWN FOR CLARITY. CHANNELS B, C, & D SHALL BE CONNECTED THE SAME WAY WITH EACH CHANNEL GIVING AN INDEPENDENT ISOLATION CLOSURE SIGNAL TO CHANNELS "A" AND "B". THREE STEAM LEAK DETECTOR SETS PER CHANNEL SERVE HPCI EQUIPMENT AND ITS STEAM PIPING, WITH THE REMAINING MONITORING THE STEAM PIPING SERVING RHR.
  - ISOLATION SIGNAL SWITCHES SHALL BE OF THE TYPE THAT CLOSE CONTACTS FOR SPECIFIED ISOLATION EVENT. WHERE AUX RELAYS ARE USED IN THE ISOLATION CHANNELS, THEY SHALL BE POWERED FROM THE STATION BATTERIES.
  - FOR LOCATION AND IDENTIFICATION OF INSTRUMENTS, SEE INSTRUMENT DATA SHEET LISTED IN MPL FOR EACH INSTRUMENT.
  - THE HPCI SYSTEM SHALL BE DESIGNATED IN ACCORDANCE WITH PROPOSED CRITERIA FOR NUCLEAR POWER PLANT PROTECTION SYSTEM IEEE 279 INSOFAR AS PRACTICABLE.
  - OPERATION OF HIGH STEAM FLOW SWITCHES DPIS-76 & 77 ARE DELAYED 3 SECONDS BY TDR-K33 & K45.
  - RHR STEAM CONDENSING IS NO LONGER AN OPERATIONAL MODE.
  - ACTUATION OF CHANNEL "A" CLOSURES M023-15, A023-70, A023-71, AND PRODUCES TURBINE TRIP. ACTUATION OF CHANNEL "B" CLOSURES M023-16, M023-58, A023-70, A023-71 AND PRODUCES TURBINE TRIP.
- REFERENCE DRAWINGS:**
- 729E261BC P&ID HIGH PRESSURE COOLANT INJECTION SYSTEM
  - 719E4158B P&ID NUCLEAR BOILER VESSEL INSTRUMENTATION
  - 209A4756 LOGIC SYMBOLS
  - 730E1498B FCD NUCLEAR BOILER MISC. SYSTEM
  - 730E1498B FCD RHR SYSTEM
  - 729E4028B FCD CORE SPRAY SYSTEM
  - 729E5178C FCD RCIC SYSTEM
  - 729E1288B P&ID RHR SYSTEM
  - 718E833BA P&ID REACTOR WATER CLEAN-UP SYSTEM
  - 791E271 HPCI ELEMENTARY DIAGRAM

**LEGEND:**

- \* - SWITCHGEAR DEVICE FUNCTION NO ASA SPEC C37.2
- + - FURNISHED WITH TURBINE SEE REF DWG 10

A - SIGNAL  
B - SH NO  
C - COORDINATES

**452005102**  
**INFORMATION ONLY**  
**CADD DRAWING**  
DO NOT REVISE MANUALLY

**\*\* THIS DRAWING GENERATED BY NPPD**

NO.	REVISIONS

SIGNIFICANT NUMBER	1	2	3	4	5	6
GROUP						

DRAWN	DATE
DR	10-19-93
CHECKED	DATE
JAC	10-29-93
APPROVED	DATE
BAM	12/01/93
FILMED	

**COOPER NUCLEAR STATION**  
**FUNCTIONAL CONTROL DIAGRAM**  
**HIGH PRESSURE COOLANT INJECTION SYS**

**GENERAL ELECTRIC\***  
CADD FILE: CO011074

729E589BB SH. 1 NO6

REVISIONS

NO.