CONTROL POINT LIST - CNMS DI WATER SYSTEM

BUILDING: CNMS BUILDING DI SYSTEMS

POINT DESCRIPTION	OUTPUT FROM DDC – DIGITAL: CONTROL RELAY	HANDS/OFF/AUTO	OPEN/CLOSE	OUTPUT FROM DDC – ANALOG: CONTROL POINT ADJUSTMENT	PROPORTIONAL CONTROL	INPUT TO DDC – DIGITAL: CONTACT CLOSURE	PULSE	DIFFERENTIAL PIPES SWITCH	INPUT TO DDC – ANALOG: PRESSURE INLET	PRESSURE OUTLET	GENERAL ALARM	TEMPERATURE (F)	% RELATIVE HUMIDITY	RESISTIVITY	LEVEL	FLOW	SOFTWARE – ALARMS – DIGITAL: CONTACT CLOSURE--DRY FILTER	CONTACT CLOSURE--EQUIPMENT FAILURE	ALARMS – ANALOG: HIGH LIMIT	LOW LIMIT	RUN TIME	APPLICATIONS: DUTY CYCLING	START/STOP	ECONOMIZER OFF/AUTO	REHEAT COIL RESET	LEAD/LAG	CHILLED WATER RESET	FAILURE MODE
DI WATER SYSTEMS																												
PUMP – START/STOP– P–CN–5A	X																						X					
PUMP – STATUS, P–CN–5A									X	X								X										
PUMP – START/STOP–, P–CN–5B	X																						X					
PUMP – STATUS, P–CN–5B									X	X								X										
PUMP – START/STOP– P–CN–4A	X																						X					
PUMP – STATUS, P–CN–4A								X										X										
PUMP – START/STOP– P–CN–4B	X																						X					
PUMP – STATUS, P–CN–4B								X										X										
DI RESISTIVITY – RO INLET														X					X	X								
DI RESISTIVITY FIRST PASS OUT.														X					X	X								
DI RESISTIVITY SEC. PASS OUT.														X					X	X								
DI RESISTIVITY – DISTRIBUTION														X					X	X								
DI RESISTIVITY – DI WATER RETURN														X					X	X								
LEVEL CONTROLER– DI STORAGE TANK.															X				X	X								

SEQUENCE OF OPERATION

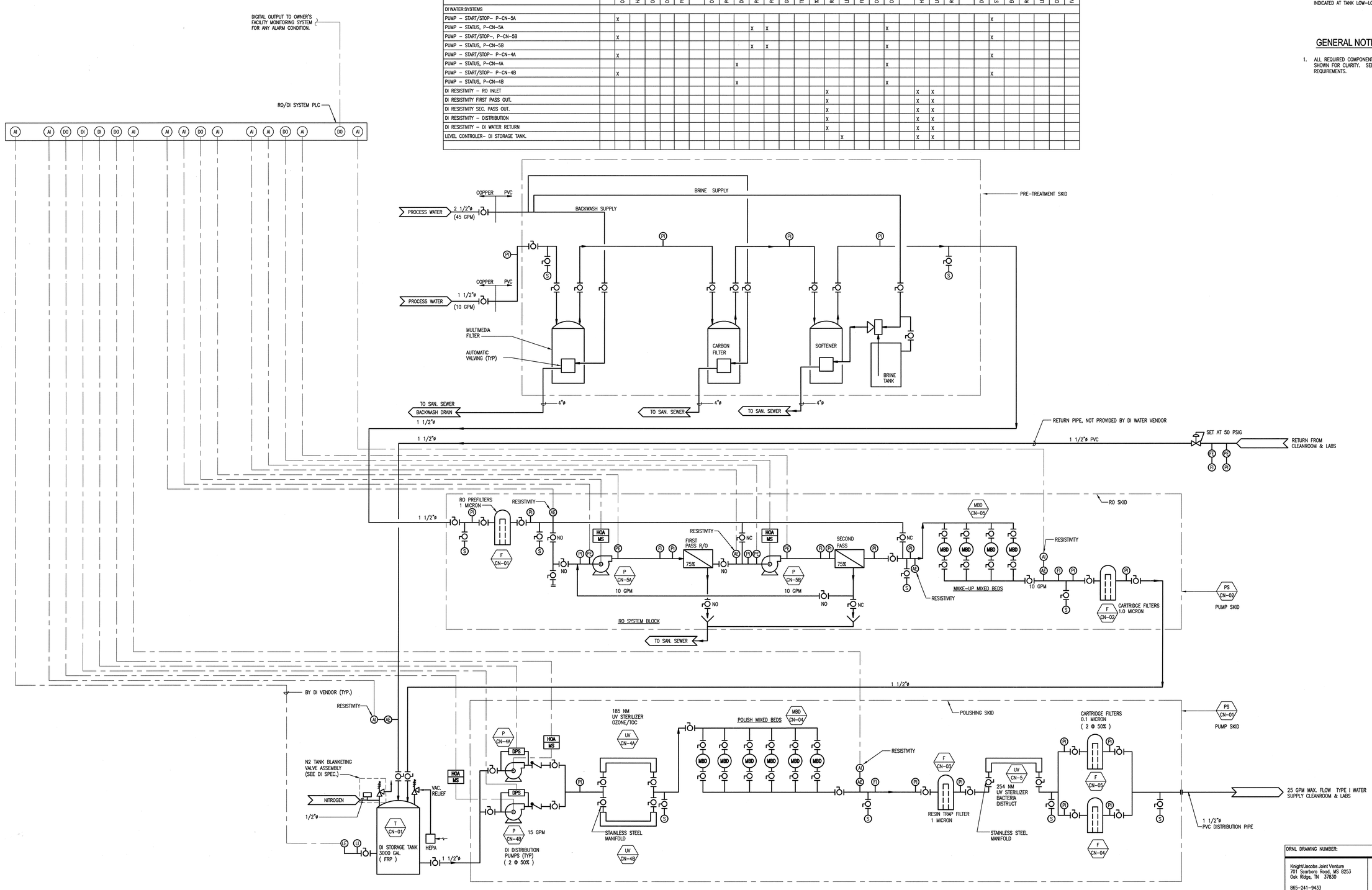
1. GENERAL:
THE MAIN DI DISTRIBUTION SYSTEM PUMPS SHALL BE ENERGIZED THROUGH THE CONTROL SYSTEM AND SHALL RUN CONTINUOUSLY. SHOULD A PUMP FAIL TO START, OR FAIL DURING OPERATION, THE CONTROL SYSTEM SHALL INDICATE AN ALARM CONDITION.

2. RESISTIVITY:
A RESISTIVITY SENSOR IN THE MAIN DI WATER LOOP SUPPLY AND RETURN SHALL PROVIDE INPUT TO THE CONTROL SYSTEM. SHOULD THE RESISTIVITY DROP BELOW 18 MEG–OHM ON THE SUPPLY OR 16 MEG–OHM ON THE RETURN, AN ALARM CONDITION SHALL BE SHOWN AT THE CONTROL SYSTEM. A RESISTIVITY SENSOR IN THE DI MAKEUP LOOP SHALL PROVIDE INPUT TO THE CONTROL SYSTEM. SHOULD THE MAKEUP LOOP RESISTIVITY DROP BELOW THE DESIRED SET POINT AN ALARM CONDITION SHALL BE SHOWN AT THE CONTROL SYSTEM.

3. TANK LEVEL:
A TANK LEVEL INDICATOR SHALL PROVIDE LOCAL TANK LEVEL INDICATION. A TANK LEVEL SENSOR SHALL ENERGIZE THE RO SYSTEM PUMPS ON LOW LEVEL AND DE–ENERGIZE THE PUMPS AT TANK HIGH LEVEL. AN ALARM CONDITION SHALL BE INDICATED AT TANK LOW–LOW LEVEL, OR TANK HIGH–HIGH LEVEL.

GENERAL NOTES

1. ALL REQUIRED COMPONENTS FOR A COMPLETE DI WATER SYSTEM ARE NOT SHOWN FOR CLARITY. SEE SPECIFICATIONS FOR A COMPLETE DESCRIPTION OF REQUIREMENTS.



REV	CHANGE TYPE	CHANGE CONTROL SYSTEM	CHANGE REQUEST NUMBER	DESCRIPTION	DSN	CHK	DEPT
0				CERTIFIED FOR CONSTRUCTION – 12/9/02	MI	BWJ	

REVISION OR ISSUE PURPOSE

DATE	PE	DATE	PJ	DATE	REQ	DATE	UTB	DATE	RPE	RPE NO	DATE
11/4/03		11/03		11/03	BWJ	11/04/03			BWJ	105869	12/9/02

REVISION APPROVALS

ST	CV	EC	EE	EM	IE	M	PD	SE	AR
BZ	AW	BS	AK	IM	DM	–	BWJ	–	TW

SQUAD CHECK

RPE: BRUCE W. JOHNSON, REGISTERED ENGINEER, CONSULTING, 001078, STATE OF TENNESSEE

REV. 0 DATE 12/9/02

DRAWING APPROVALS

DSN	
DRW	
CHK	
DEPT	
PE	11/04/03
PJ	11/03/03
REQ	11/04/03
UTB	

ORNL DRAWING NUMBER:

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UT–BATTELLE, LLC. + Oak Ridge, Tennessee

PROJECT NAME:

CENTER FOR NANOPHASE MATERIALS SCIENCES
DI WATER SYSTEM CONTROL DIAGRAM

1	48	49	50	PLANT	BLDG	FL	SH.	OF	TYPE	CLASS
3	P	X	X	8	8610		1	1	P	U
51		52		53	A/E DRAWING NUMBER:					REV
NC		NA			P8.11.40					0

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NUMBER OF SECTION OR DETAIL
DRAWING ON WHICH SECTION OR DETAIL IS SHOWN OR TAKEN
SECTION AND DETAIL KEY

THIS DOCUMENT CONTROLLED BY
CHANGE CONTROL SYSTEM
ENGINEERING PROCEDURE

AutoCAD