01.235.91

NINE MILE POINT NUCLEAR STATION UNIT #2

OPERATING PROCEDURE

PROCEDURE NO. N2-OP-60

DRYWELL COOLING

APPROVALS	SIGNATURES	DATE AND INITIALS REVISION 0	REVISION 1	REVISION 2
Superintendent Operations NMP Unit #2 M.D. Jones	M.D. Jones	6-6-86 MDJ	9/4/86 MDJ	
Station Superintendent NMP Unit #2. R.B. Abbott	RB Abbott	6/6/86 RBA	9/8/86 RBA	
General Superintendent Nuclear Generation T.J. Perkins	T/Perkins	6/7/86 TJP	9/9/86 TJP	

FOR INFORMATION ONLY

Summary of Pages

Revision 1 (Effective 9/9/86) (Cont'd on Cover Sheet 2)

Page	Date
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THIS PROCEDURE SUPERSEDES N2-IOP-60, REV. 1

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE IS NOT TO BE USED
AFTER SEPTEMBER 1992
SUBJECT TO PERIODIC REVIEW

5/4/195

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OPERATING PROCEDURE

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Cover Sheet Continuation (Page 2)

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7,27	June 1989 (TCN-4)
ii,2	January 1990 (TCN-5)
4	April 1990 (TCN-6)
9,18,19,21,23	November 1990 (TCN-10)
i,6,8,10,11,13,14,16, 17,20	January 1991 (TCN-11 and Publication Change *1)

N2-OP-60

DRYWELL COOLING

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4.0 G.E. SIL 244 | TCN-5

5.0 NMP 56341

DRYWELL COOLING

A. TECHNICAL SPECIFICATIONS

1.0 Section 3/4.6.1.7, Drywell Average Air Temperature

B. SYSTEM DESCRIPTION

The purpose of the Drywell Cooling System (DRS) is to condition the air inside drywell, to ensure optimum performance of equipment located within the drywell. The DRS is designed to maintain the average drywell temperature under 150°F.

The DRS system consists of 10 unit coolers, dampers, ductwork, controls and instrumentation. Each unit cooler consists of one vaneaxial motor driven fan and one Reactor Building Closed Loop Cooling Water (RBCLCW) supplied cooling coil. Each unit cooler is supplied with a drain to the Drywell Floor Drain (DFR) System.

The DRS system provides temperature control and air recirculation for three basic areas of the drywell: reactor vessel top head area, reactor vessel area and general drywell areas.

Unit coolers 2DRS-UC3A(B) provide cooling to the RPV top head area. The two 100% capacity unit coolers are rated at 8500 cfm. During normal operation, one of two unit cooler fans will be in service, drawing air from above the RPV top head area through a common header, and discharges through a common header back to the RPV top head area. A backdraft damper is provided on the discharge of each unit cooler to prevent reverse flow through the standby unit. The RPV top head area suction duct is removable when required, to allow for RPV head removal.

Unit coolers 2DRS-UC1A through UC1D provide cooling to the RPV Control Rod Drive (under vessel) area, the RPV skirt and biological shield wall annular space. The four 11,000 cfm unit cooler fans take a suction from the upper areas of the drywell and discharge to the CRD area, RPV skirt area, biological shield wall annular space and Reactor Recirc Pump area. The air is circulated vertically throughout drywell to prevent accumulation of hot air at upper levels of the drywell.

Unit coolers 2DRS-UC2A through UC2D provide general drywell area cooling. The general area unit coolers are non-ducted and have a 16,750 cfm capacity each. Normally all four units coolers are in operation, providing a circumferential turbulent mixing action.

Drywell unit coolers 2DRS-UC1A through UC1D are located at elevation 240', 2DRS-UC2A through UC2D are located at elevation 278'6" while 2DRS-UC3A and UC3B are located at elevation 288'3".

During normal system operation, all but one (either UC3A or UC3B) unit cooler fans are running. The air is recirculated in drywell and maintained at an average temperature below 150°F. Cooling water flow from RBCLCW is provided to unit cooler cooling coils continuously.

The drywell unit coolers are controlled manually from P873. Interlocks prevent starting (and will trip if running) any unit cooler unless the RBCLCW inboard and outboard isolation valves are full open. The RBCLCW valves open interlock can be bypassed if required using a keylock LOCA override switch at P873. With a LOCA signal present and offsite power available, the override switch can be used to place DRS unit coolers in service with or without RBCLCW flow to recirculate the drywell air. When power from main turbine generator and offsite power is lost, the stub busses can be connected to the onsite diesel generators as necessary to provide DRS cooling, except when a LOCA signal is present.

The RBCLC Water LOCA isolation signal can be bypassed using two additional keylock switches at P873, to allow RBCLC water to cool the drywell during a post scram pressurization condition. Operation instructions of the two RBCLCW override switches are provided in N2-OP-13.

C. OPERATING REQUIREMENTS

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

2.0 Reactor Building Closed Loop Cooling Water System N2-OP-13

D. PRECAUTIONS/LIMITATIONS

1.0 Failure of one or all drywell unit coolers may cause drywell temperature to increase, thus causing drywell pressure to increase, that can result in a high drywell pressure signal (false LOCA), possibly resulting in reactor scram and various group isolations. If all drywell cooling is lost during power operation, the drywell temperature/pressure rise will be rapid and immediate action should be taken to prevent a high drywell pressure signal from occurring (1.68 #). TCN-5

2.0 Pistol grip control switches must be RESET following automatic trip by momentarily placing the switch in the STOP, then Mid After Stop, positions.

3.0 System unit cooler filters are to be used only during construction or outage conditions. Do not use unit cooler filters during normal plant/system operation.

4.0 Be sure the unit coolers have been properly vented on the RBCLCW side to remove all air from the cooling coils. Air in the coils will have an effect on unit cooler heat transfer capability. Additionally, ensure RBCLCW flow to unit coolers have been properly balanced. Low flow will affect heat transfer ability while high flow may have a detrimental effect (vibration, for example) on the cooling coils.

5.0 If a running fan develops a vibration or noise problem, shutdown the fan immediately (if possible) and do not operate until the cause is determined and corrected.

6.0 Air temperature in drywell must be maintained between 70 to 150°F (FSAR and Tech. Specs. requirements).

7.0 All applicable evolutions described in this procedure shall be monitored and controlled in accordance with Radiation Protection Procedures. 1

E. STARTUP PROCEDURE

1.0 Startup of DRS Unit Coolers

1.1 At P873, open or ensure open the following valves:

a. 2CCP*MOV265 (DRYWELL COOLERS CONTMT ISOL SUPPLY V).

b. 2CCP*MOV273 (DRYWELL COOLERS CONTMT ISOL SUPPLY V).

c. 2CCP*MOV122 (DRYWELL COOLERS CONTMT ISOL RETURN V).

d. 2CCP*MOV124 (DRYWELL COOLERS CONTMT ISOL RETURN V).

e. 2CCP-MOV1A (RBCLC TO DW CLR UC1A BLOCK VLV).

f. 2CCP-MOV1B (RBCLC TO DW CLR UC1B BLOCK VLV).

g. 2CCP-MOV1C (RBCLC TO DW CLR UC1C BLOCK VLV).

h. 2CCP-MOV1D (RBCLC TO DW CLR UC1D BLOCK VLV).

i. 2CCP-MOV2A (RBCLC TO DW CLR UC2A BLOCK VLV).

j. 2CCP-MOV2B (RBCLC TO DW CLR UC2B BLOCK VLV).

k. 2CCP-MOV2C (RBCLC TO DW CLR UC2C BLOCK VLV).

l. 2CCP-MOV2D (RBCLC TO DW CLR UC2D BLOCK VLV).

1.2 With associated control switch at P873, open either RBCLC TO DW CLR UC3A(B) BLOCK VLV 2CCP-MOV3A (2DRS-UC3A inlet) or MOV3B (2DRS-UC3B inlet) for DRS unit cooler to be placed in service.

1.3 Line up unit cooler power supplies in accordance with Table II (observation of energized status light at P873 indicates unit cooler power ON).

1.4 Ensure two Keylock Drywell Unit Cooler Fans GR1/2 LOCA override switches are in RESET positions at P873.

1.4.1 Ensure two Keylock Drywell Unit Cir Div I (II) Water LOCA Override Switches are in "RESET" positions at P873. 1

NOTE: Drywell temperature regulation is accomplished by the number of unit coolers in service.

1.5 At P873, start the following drywell unit coolers by placing associated control switches to "START" positions:

1.5.1 2DRS-UC1A

1.5.2 2DRS-UC1B

1.5.3 2DRS-UC1C

1.5.4 2DRS-UC1D

1.5.5 2DRS-UC2A

1.5.6 2DRS-UC2B

1.5.7 2DRS-UC2C

1.5.8 2DRS-UC2D

1.5.9 Either 2DRS-UC3A or UC3B

1.6 Ensure alarms 873201 (873202), Drywell Unit Cooling Group 1 (2) System Trouble, remain clear at P873.

1.7 Monitor DRS unit cooler, drywell and RBCLCW temperatures using indicators listed in Table III.

F. NORMAL OPERATION

1.0 During normal plant operation, the drywell cooling system (DRS) is in service with all drywell unit coolers operating, with the exception of one reactor vessel top head area unit cooler (either 2DRS-UC3A or UC3B), which is in Standby. Monitor DRS operation with indicators 2DRS-TR10A and 2DRS-TR10B. | TCN-6

2.0 Drywell temperature regulation is accomplished by the number of unit coolers in service. Turn selected unit coolers off as necessary to raise drywell temperature.

3.0 Rotation of 2DRS-UC3A and UC3B

3.1 Rotate operation of 2DRS-UC3A and UC3B occasionally to equalize operating time and equipment wear.

3.2 At P873, open standby unit cooler RBCLCW to DW CLR UC3B(A) Block Valve, 2CCP-MOV3B(A) with associated control switch.

3.3 At P873, start standby drywell unit cooler 2DRS-UC3B(A). Stop running unit cooler 2DRS-UC3A(B) with associated control switches.

3.4 At P873, close new standby unit cooler RBCLCW to DW CLR UC3A(B) Block Valve, 2CCP-MOV3A(B) with associated control switch.

G. SHUTDOWN PROCEDURE

1.0 Shutdown of DRS Unit Coolers

1.1 Ensure drywell cooling is no longer required.

1.2 At P873, stop the following drywell unit coolers using associated control switches. Place control switches to "PULL TO LOCK" positions as required:

1.2.1 2DRS-UC1A

1.2.2 2DRS-UC1B

1.2.3 2DRS-UC1C

1.2.4 2DRS-UC1D

1.2.5 2DRS-UC2A

1.2.6 2DRS-UC2B

1.2.7 2DRS-UC2C

1.2.8 2DRS-UC2D

1.2.9 2DRS-UC3A

1.2.10 2DRS-UC3B

1.3 As necessary, isolate RBCLCW flow to DRS unit coolers by closing the following MOVs at P873 using associated control switches:

1.3.1 2CCP-MOV1A (RBCLC TO DW CLR UC1A BLOCK VLV)

1.3.2 2CCP-MOV1B (RBCLC TO DW CLR UC1B BLOCK VLV)

1.3.3 2CCP-MOV1C (RBCLC TO DW CLR UC1C BLOCK VLV)

1.3.4 2CCP-MOV1D (RBCLC TO DW CLR UC1D BLOCK VLV)

1.3.5 2CCP-MOV2A (RBCLC TO DW CLR UC2A BLOCK VLV)

1.3.6 2CCP-MOV2B (RBCLC TO DW CLR UC2B BLOCK VLV)

1.3.7 2CCP-MOV2C (RBCLC TO DW CLR UC2C BLOCK VLV)

1.3.8 2CCP-MOV2D (RBCLC TO DW CLR UC2D BLOCK VLV)

1.3.9 2CCP-MOV3A (RBCLC TO DW CLR UC3A BLOCK VLV)

1.3.10 2CCP-MOV3B (RBCLC TO DW CLR UC3B BLOCK VLV)

1.3.11 2CCP*MOV122 (DRYWELL COOLERS CONTMT ISOL RETURN)

1.3.12 2CCP*MOV124 (DRYWELL COOLERS CONTMT ISOL RETURN)

1.3.13 2CGP*MOV265 (DRYWELL COOLERS CONTMT ISOL SUPPLY)

1.3.14 2CCP*MOV273 (DRYWELL COOLERS CONTMT ISOL SUPPLY)

H. OFF NORMAL PROCEDURE

1.0 DRS Operation with Inadvertent Closure of RBCLC Valves TCN-11

NOTE: RBCLCW isolation valves 2CCP*MOV265, MOV273, MOV124 and MOV122 will close on LOCA signal, isolating cooling water from DRS unit coolers. Refer to N2-OP-13 for instructions on restoring RBCLC water supply to DRS unit coolers due to inadvertant isolation. To circulate air within drywell with inadvertant isolation signal present or when RBCLC valves have otherwise shut, perform the following: TCN-11

1.1 If any RBCLC Isolation Valve is not full open, at P873, place two keylock Drywell Unit Cooler Fans GR1/2 LOCA override switches to "OVERRIDE" positions.

1.2 At P873, start the following DRS unit coolers as required:

1.2.1 2DRS-UC1A

1.2.2 2DRS-UC1B

1.2.3 2DRS-UC1C

1.2.4 2DRS-UC1D

1.2.5 2DRS-UC2A

1.2.6 2DRS-UC2B

1.2.7 2DRS-UC2C

1.2.8 2DRS-UC2D

1.2.9 2DRS-UC3A

1.2.10 2DRS-UC3B

1.3 Monitor DRS unit cooler and drywell temperatures using indicators 2DRS-TR10A(B), 2CMS*TRX(Y,Z) 130 on CEC*PNL873 and 2CMS*TRX(Y,Z) 140 on CEC*PNL875.

2.0 High Drywell Temperature Response

2.1 On elevated drywell temperatures, especially in the upper regions, the standby RPV top head area unit cooler (2DRS-UC3A or UC3B) may be placed in service for short periods of time.

2.2 At P873, open RBCLCW supply valve 2CCP-MOV3A(B) to standby unit cooler 2DRS-UC3A(B). Start standby unit cooler 2DRS-UC3A(B).

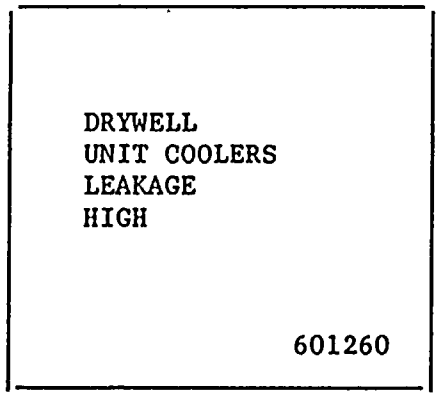
2.3 Stop one of two unit coolers, either 2DRS-UC3A or UC3B, and close associated CCP Supply valve 2CCP-MOV3A(B) at P873 when high drywell temperature is no longer a problem.

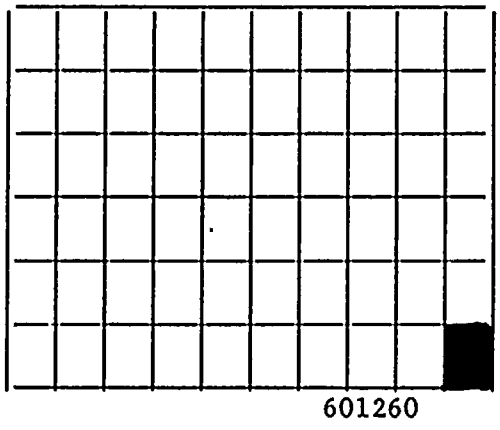
2.4 If average drywell temperature (as determined per TS 4.6.1.6) exceeds 150°F take the action required per TS 3.6.1.6.

I. PROCEDURES FOR CORRECTING ALARM CONDITIONS

1.0 601260 Drywell Unit Coolers Leakage High

Reflash: Yes





1.1

Computer Point	Computer Printout	Source
2CCPFC02	DW UNT CLRS LEAKAGE	2CCP-FDSH266
2CCPFA04	RBCLCW FL FR DW UNIT CLR	2CCP-FT135
2CCPFA05	RBCLCW FL TO DW UNIT CLR	2CCP-FT266

*1

1.2 Automatic Response

NONE

1.3 Corrective Action

a. Alarm 601260 actuates on Drywell Unit Coolers RBCLCW High Differential Flow (greater than 100 GPM). Monitor Computer Points 2CCPFA04 (RBCLCW flow from DRS) and 2CCPFA05 (RBCLCW flow to DRS).

b. If necessary, isolate flow to DRS unit coolers by closing 2CCP*MOV265 (or MOV273) and MOV124 (or MOV122). DRS unit cooler fans will trip off line (unless DRS unit cooler LOCA override switches in OVERRIDE at P873).

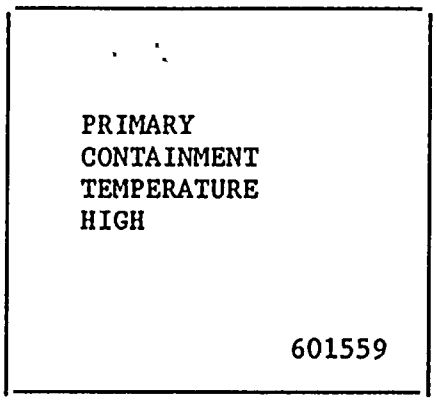
c. Determine and correct cause of alarm.

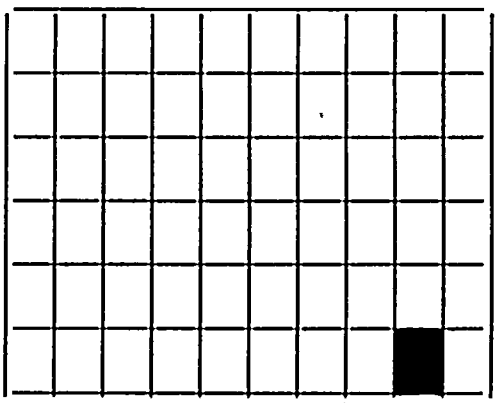
I. PROCEDURES FOR CORRECTING ALARM CONDITIONS

2.0 601559 Primary Containment Temperature High

Reflash: No

TCN-10





2.1	Computer Point	Computer Printout	Source
	2LDSTC74	PRI CONTMT TEMP	E31-N017A through D
			Greater than 150°F

2.2 Automatic Response

NONE

2.3 Corrective Action

a. Monitor Primary Containment Temperatures at E31-R608, Points 2 through 5, on P632. If required, monitor drywell pressure and temperature using indicators listed on N2-OP-60 Table III.

b. Ensure all available DRS unit coolers running and RBCLCW aligned to DRS per Section E.1.0 or H.3.0 of N2-OP-60.

c. Determine and correct cause of alarm.

d. Perform Attachment 1, Items 27a through 27m, of N2-OSP-LOG-D001 to obtain drywell average air temperature per TS 4.6.1.6. If drywell average air temperature exceeds 150°F, take the action required per TS 3.6.1.6.

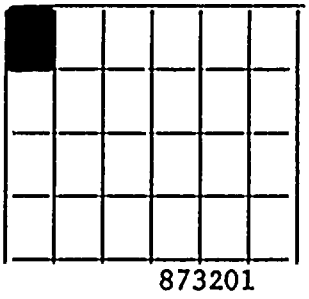
I. PROCEDURES FOR CORRECTING ALARM CONDITIONS

3.0 873201 Drywell Unit Cooling Group 1 System Trouble

Reflash: Yes

DRYWELL
UNIT COOLING
GROUP 1 SYS
TROUBLE

873201



3.1

	Computer Point	Computer Printout	Source	
a.	DRSFC01	DW UNT CLR UC1A AIR FLOW	2DRS-FS6A Low	
b.	DRSFC03	DW UNT CLR UC1C AIR FLOW	2DRS-FS6C Low	
c.	DRSFC05	DW UNT CLR UC2A AIR FLOW	2DRS-FS5A Low	
d.	DRSFC07	DW UNT CLR UC2C AIR FLOW	2DRS-FS5C Low	
e.	DRSFC09	DW UNT CLR UC3A AIR FLOW	2DRS-FS7A Low	*1
f.	DRSTC01	DW UNIT CLR UC1A FAN MOT	49X-2DRSA01	
g.	DRSTC03	DW UNIT CLR UC1C FAN MOT	49X-2DRSC01	
h.	DRSTC05	DW UNIT CLR UC2A FAN MOT	49X-2DRSA02	
i.	DRSTC07	DW UNIT CLR UC2C FAN MOT	49X-2DRSC02	

j.	DRSTC09	DW UNIT CLR UC3A FAN MOT	49X-2DRSA03
k.	DRSTC11	DW UC1A DISCH AIR TEMP	2DRS-TE1A Low
ℓ.	DRSTC13	DW UC1C DISCH AIR TEMP	2DRS-TE1C Low
m.	DRSTC15	DW UC2A DISCH AIR TEMP	2DRS-TE2A High
n.	DRSTC17	DW UC2C DISCH AIR TEMP	2DRS-TE2C High
o.	DRSTC19	DW UC3A DISCH AIR TEMP	2DRS-TE102 High

*1

3.2 Automatic Response

a. The respective fan will trip off line, if cause of alarm is unit cooler fan motor overload.

3.3 Corrective Action

a. Monitor computer points listed above. Determine which point(s) initiated alarm 873201.

b. If cause of alarm is unit cooler discharge air flow low:

1. Monitor unit cooler fan running status (red light on, green light off) at P873. Monitor fan inlet and outlet temperatures at 2DRS-TR10A at P873.

2. For DRS-UC3A low air flow only, start 2DRS-UC3B at P873 and stop 2DRS-UC3A. At P873, open 2CCP-MOV3B and close 2CCP-MOV3A. Ensure alarm 873201 clears.

3. If operation is not critical, stop fan with low air flow.

4. If accessible, locally inspect unit cooler. Ensure filters (used only during construction or outages) are removed. Ensure other debris not blocking flow path. For 2DRS*UC3A, UC1A and UC1C only, ensure balancing dampers throttled open.

5. Determine and correct cause of alarm.

c. If cause of alarm is unit cooler fan motor overload:

1. Ensure associated fan trips off line (green status light energized at P873).

2. If 2DRS-UC3A tripped on motor overload, start 2DRS-UC3B from P873. Open 2CCP-MOV3B and close 2CCP-MOV3A. Ensure alarm 873201 clears.

3. Place tripped unit cooler control switch to "STOP" position (to reset fan circuitry) and then to "PULL TO LOCK" position.

4. determine and correct cause of motor overload.

d. If cause of alarm is unit cooler fan discharge air temperature high/low:

1. Monitor fan discharge air temperature at 2DRS-TR10A on P873.

2. Check affected fan for proper operation (red status light energized at P873, DRS low air flow computer points not in alarmed state).

3. Check RBCLCW flow to DRS unit coolers. Refer to N2-OP-60 Section E.1.0 for valve lineup. Also monitor the following computer points:

Point	Description
2CCPFA04	RBCLCW Flow From DRS
2CCPFA05	RBCLCW Flow To DRS
2CCPTA01	2DRS-UC1A RBCLCW Outlet Temp.
2CCPTA03	2DRS-UC1C RBCLCW Outlet Temp.
2CCPTA05	2DRS-UC2A RBCLCW Outlet Temp.
2CCPTA07	2DRS-UC2C RBCLCW Outlet Temp.
2CCPTA09	2DRS-UC3A RBCLCW Outlet Temp.

4. Ensure RBCLCW flow properly balanced and unit cooler cooling coils properly vented.

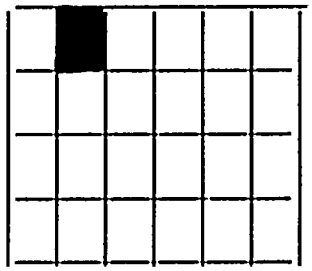
5. Determine and correct cause of alarm.

I. PROCEDURES FOR CORRECTING ALARM CONDITIONS

4.0 873202 Drywell Unit Cooling Group 2 System Trouble

Reflash: Yes

DRYWELL UNIT COOLING GROUP 2 SYS TROUBLE 873202



4.1

	Computer Point	Computer Printout	Source
a.	DRSFC02	DW UNT CLR UC1B AIR FLOW	2DRS-FS6B Low
b.	DRSFC04	DW UNT CLR UC1D AIR FLOW	2DRS-FS6D Low
c.	DRSFC06	DW UNT CLR UC2B AIR FLOW	2DRS-FS5B Low
d.	DRSFC08	DW UNT CLR UC2D AIR FLOW	2DRS-FS5D Low
e.	DRSFC10	DW UNT CLR UC3B AIR FLOW	2DRS-FS7B Low
f.	DRSTC02	DW UNIT CLR UC1B FAN MOT	49X-2DRSB01
g.	DRSTC04	DW UNIT CLR UC1D FAN MOT	49X-2DRSD01
h.	DRSTC06	DW UNIT CLR UC2B FAN MOT	49X-2DRSB02
i.	DRSTC08	DW UNIT CLR UC2D FAN MOT	49X-2DRSD02
j.	DRSTC10	DW UNIT CLR UC3B FAN MOT	49X-2DRSB03

*1

k.	DRSTC12	DW UC1B DISCH AIR TEMP	2DRS-TE1B Low	
ℓ.	DRSTC14	DW UC1D DISCH AIR TEMP	2DRS-TE1D Low	
m.	DRSTC16	DW UC2B DISCH AIR TEMP	2DRS-TE2B High	*1
n.	DRSTC18	DW UC2D DISCH AIR TEMP	2DRS-TE2D High	
o.	DRSTC20	DW UC3B DISCH AIR TEMP	2DRS-TE102 High	

4.2 Automatic Response

a. The respective fan will trip off line, if cause of alarm is unit cooler fan motor overload.

4.3 Corrective Action

a. Monitor computer points listed above. Determine which point(s) initiated alarm 873202.

b. If cause of alarm is unit cooler discharge air flow low:

1. Monitor unit cooler fan running status (red light on, green light off) at P873. Monitor fan inlet and outlet temperatures at 2DRS-TR10B at P873.

2. For 2DRS-UC3B low air flow only, start 2DRS-UC3A at P873 and stop 2DRS-UC3B. At P873, close 2CCP-MOV3B and open 2CCP-MOV3A. Ensure alarm 873202 clears.

3. If operation is not critical, stop fan with low air flow.

4. If accessible, locally inspect unit cooler. Ensure filters (used only during construction or outages) are removed. Ensure other debris not blocking flow path. For 2DRS*UC3B, UC1B and UC1D only, ensure balancing dampers throttled open.

5. Determine and correct cause of alarm.

c. If cause of alarm is unit cooler fan motor overload:

1. Ensure associated fan trips off line (green status light energized at P873).

2. If 2DRS-UC3B tripped on motor overload, start 2DRS-UC3A from P873. Close 2CCP-MOV3B and open 2CCP-MOV3A. Ensure alarm 873202 clears.

3. Place tripped unit cooler control switch to "STOP" position (to reset fan circuitry) and then to "PULL TO LOCK" position.

4. Determine and correct cause of motor overload.

d. If cause of alarm is unit cooler fan discharge air temperature high/low:

1. Monitor fan discharge air temperature at 2DRS-TR10B on P873.

2. Check affected fan for proper operation (red status light energized at P873, DRS low air flow computer points not in alarmed state).

3. Check RBCLCW flow to DRS unit coolers. Refer to N2-OP-60 SEction E.1.0 for valve lineup. Also monitor the following computer points:

Point	Description
2CCPFA04	RBCLCW Flow From DRS
2CCPFA05	RBCLCW Flow To DRS
2CCPTA02	2DRS-UC1B RBCLCW Outlet Temp.
2CCPTA04	2DRS-UC1D RBCLCW Outlet Temp.
2CCPTA06	2DRS-UC2B RBCLCW Outlet Temp.
2CCPTA08	2DRS-UC2D RBCLCW Outlet Temp.
2CCPTA10	2DRS-UC3B RBCLCW Outlet Temp.

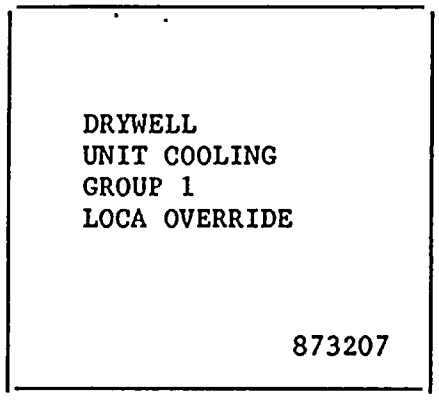
4. Ensure RBCLCW flow properly balanced and unit cooler cooling coils properly vented.

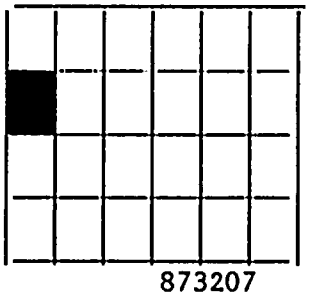
5. Determine and correct cause of alarm.

I. PROCEDURES FOR CORRECTING ALARM CONDITIONS

5.0 873207 Drywell Unit Cooling Group 1 LOCA Override

Reflash: No





5.1	Computer Point	Computer Printout	Source	
	2DRSBC01	DW UC FANS GP1 LOCA OVRD	Relay 3X2-2DRSN01	*1

5.2 Automatic Response

NONE

5.3 Corrective Action

a. Alarm 873207 actuates when Group I Drywell Unit Coolers LOCA Override Switch is placed in "OVERRIDE" position at P873. This switch allows startup of Group I DRS units coolers (2DRS-UC1A, UC1C, UC2A, UC2C, and UC3A) independent of "CCP isolation valves open" interlocks.

b. When plant conditions warrant, place Group I Drywell Unit Coolers LOCA Override Switch to RESET position at P873.

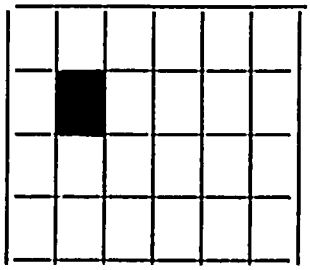
I. PROCEDURES FOR CORRECTING ALARM CONDITIONS

6.0 873208 Drywell Unit Cooling Group 2 LOCA Override

Reflash: No

DRYWELL
UNIT COOLING
GROUP 2
LOCA OVERRIDE

873208



873208

6.1

Computer Point	Computer Printout	Source
2DRSBC02	DW UC FANS GP2 LOCA OVRD	Relay 3X2-2DRSN02

*1

6.2 Automatic Response

NONE

6.3 Corrective Action

a. Alarm 873208 actuates when Group II Drywell Unit Coolers LOCA Override switch is placed in "OVERRIDE" position at P873. This switch allows startup of Group II DRS unit coolers (2DRS-UC1B, UC1D, UC2B, UC2D and UC3B) independent of "CCP isolation valves open" interlocks.

b. When plant conditions warrant, place Group II Drywell Unit Coolers LOCA Override Switch to "RESET" position at P873.

I. PROCEDURES FOR CORRECTING ALARM CONDITIONS

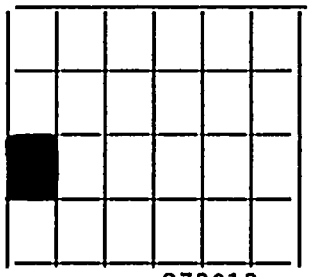
7.0 873213 Drywell Unit Cooler 2DRS-UC3A Vibration High

TCN-10

Reflash: No

DRYWELL
UNIT CLR 3A
VIBRATION
HIGH

873213



873213

7.1	Computer Point	Computer Printout	Source
	2DRSNC01	DRYWELL UC3A VIBRATION	2DRS-NBE11A

7.2 Automatic Response

NONE

7.3 Corrective Action

a. At P873, start 2DRS-UC3B if available. Open 2CCP-MOV3B.

b. At P873, stop 2DRS-UC3A. Place control switch for 2DRS-UC3A to "PULL TO LOCK" position. Close 2CCP-MOV3A.

c. Determine and correct cause of alarm.

I. PROCEDURES FOR CORRECTING ALARM CONDITIONS

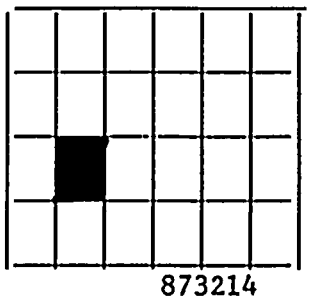
8.0 873214 Drywell Unit Cooler 2DRS-UC3B Vibration High

Reflash: No

TCN-10

DRYWELL
UNIT CLR 3B
VIBRATION
HIGH

873214



873214

8.1

Computer Point	Computer Printout	Source
2DRSNC02	DRYWELL UC3B VIBRATION	2DRS-NBE11B

8.2 Automatic Response

NONE

8.3 Corrective Action

a. At P873, start 2DRS-UC3A if available. Open 2CCP-MOV3A.

b. At P873, stop 2DRS-UC3B. Place control switch for 2DRS-UC3B to "PULL TO LOCK" position. Close 2CCP-MOV3B.

c. Determine and correct cause of alarm.

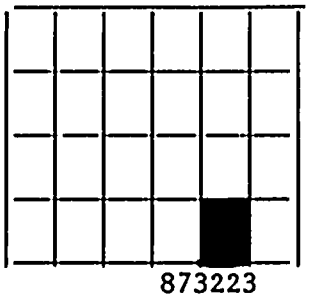
I. PROCEDURES FOR CORRECTING ALARM CONDITIONS

9.0 873223 Reactor Building Closed Loop Cooling Water To Drywell Unit Coolers Isolation Valves Motor Overload

Reflash: Yes

RBCLCW
DW UNIT CLRS
ISOL VALVES
MOT OVERLOAD

873223



9.1	Computer Point	Computer Printout	Source	
	2CCPTC49	2CCP*MOV265/124 MOT	74 and 49 - 2CCPN03/N15	*1
	2CCPTC50	2CCP*MOV273/122 MOT	74 and 49 - 2CCPN05/N13	

9.2 Automatic Response

a. Loss of MOV open/close seal-in circuits.

9.3 Corrective Action

a. Alarm 873223 actuates when any of the following MOV motors overload without MOV loss of power: 2CCP*MOV265 (2CCPTC49), MOV124 (2CCPTC49), MOV273 (2CCPTC50) or MOV122 (2CCPTC50).

NOTE: Closing either 2CCP*MOV265, MOV124, MOV273 or MOV122 will trip DRS unit coolers off line, unless DRS unit coolers LOCA override switches at P873 are in "OVERRIDE" positions.

b. MOVs may be repositioned by holding control switches in either "OPEN" or "CLOSE" positions at P873 until MOV fully opens or closes.

c. Reposition valves if required to support plant or DRS operation. MOVs are full open during normal plant/DRS operation and are full shut during LOCA or other RBCLCW to DRS isolation conditions.

d. Determine and correct cause of alarm.

I. PROCEDURES FOR CORRECTING ALARM CONDITIONS

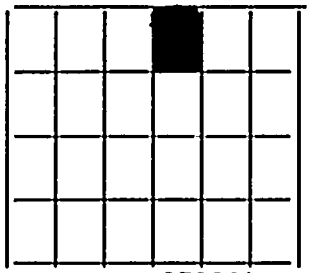
10.0 873304 Division I Drywell Temperature High

TCN-10

Reflash: Yes

DIVISION I
DRYWELL
TEMPERATURE
HIGH

873304



873304

10.1

Computer Point	Computer Printout	Source
2CMSTC03	DIV I DRYWELL TEMP	2CMS*TSHX151
2CMSTA01	CONT AREA TEMP DIV I	2CMS*TE101
2CMSTA02	CONT AREA TEMP DIV I	2CMS*TE102
2CMSTA03	CONT AREA TEMP DIV I	2CMS*TE103
2CMSTA04	CONT AREA TEMP DIV I	2CMS*TE104
2CMSTA05	CONT AREA TEMP DIV I	2CMS*TE105
2CMSTA06	CONT AREA TEMP DIV I	2CMS*TE106

10.2 Automatic Response

NONE

10.3 Corrective Action

a. Alarm 873304 actuates when any one or more of six temperature elements (see above) reaches 150°F.

b. Monitor drywell temperature at 2CMS*TI151 (Drywell Area Temp High) or 2CMS*TRX130/TRY130 (drywell and suppression chamber temperature recorder) at P873. Monitor drywell pressure at 2CMS*PI1A(B) at P601.

c. Ensure all available DRS unit coolers running and RBCLCW aligned to DRS per section E.1.0 or H.3.0 of N2-OP-60.

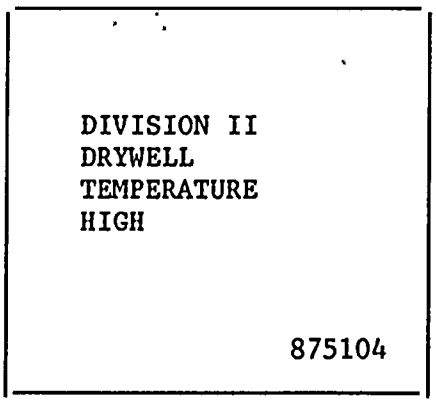
d. Determine and correct cause of alarm.

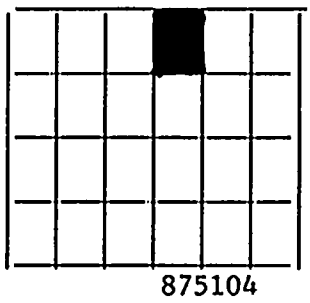
I. PROCEDURES FOR CORRECTING ALARM CONDITIONS

11.0 875104 Division II Drywell Temperature High

TCN-10

Reflash: Yes





11.1

Computer Point	Computer Printout	Source
2CMSTC04	DIV 2 DRYWELL TEMP	2CMS*TSHX153
2CMSTA10	CONT AREA TEMP DIV II	2CMS*TE116
2CMSTA11	CONT AREA TEMP DIV II	2CMS*TE117
2CMSTA12	CONT AREA TEMP DIV II	2CMS*TE118
2CMSTA13	CONT AREA TEMP DIV II	2CMS*TE119
2CMSTA14	CONT AREA TEMP DIV II	2CMS*TE120
2CMSTA15	CONT AREA TEMP DIV II	2CMS*TE121

11.2 Automatic Response

NONE

11.3 Corrective Action

a. Alarm 875104 actuates when any one or more of six temperature elements (see above) reaches 150°F.

b. Monitor drywell temperature at 2CMS*TI153 (Drywell Area Temp High) or 2CMS*TRX140/TRY140 (drywell and suppression chamber temperature recorder) at P875. Monitor drywell pressure at 2CMS*PI1A(B) at P601.

c. Ensure all available DRS unit coolers running and RBCLCW aligned to DRS per section E.1.0 or H.3.0 of N2-OP-60.

d. Determine and correct cause of alarm.

TABLE I

VALVE LINEUP

DAMPER NO.	DESCRIPTION	REQUIRED POSITION	ACTUAL POSITION	INITIALS & DATE	REMARKS
2DRS-DMP1A	UC3A Disch Damper, El. 288'3"	INSTALLED			
2DRS-DMP1B	UC3A Disch Damper, El. 288'3"	INSTALLED			
2DRS-DMPV1	2DRS-UC1A Air Balancing Damper, El. 261'0" AZ 65°	THROTTLED			
2DRS-DMPV2	2DRS-UC1A Air Balancing Damper, El. 240'0" AZ 75°	THROTTLED			
2DRS-DMPV3	2DRS-UC1B Air Balancing Damper, El. 261'0" AZ 65°	THROTTLED			
2DRS-DMPV4	2DRS-UC1B Air Balancing Damper, El. 240'0" AZ 140°	THROTTLED			
2DRS-DMPV5	2DRS-UC1C Air Balancing Damper, El. 261'0" AZ 165°	THROTTLED			TCN-
2DRS-DMPV6	2DRS-UC1C Air Balancing Damper, El. 240'0" AZ 220°	THROTTLED			
2DRS-DMPV7	2DRS-UC1D Air Balancing Damper, El. 261'0" AZ 240°	THROTTLED			
2DRS-DMPV8	2DRS-UC1D Air Balancing Damper, El. 240'0" AZ 290°	THROTTLED			
2DRS-DMPV9	2DRS-UC3A & 3B Air Balancing Damper, El. 288'3"	THROTTLED			
2DRS-DMPV10	2DRS-UC3A & 3B Air Balancing Damper, El. 288'3"	THROTTLED			
2DRS-DMPV11	2DRS-UC3A & 3B Air Balancing Damper, El. 288'3"	THROTTLED			

TABLE II

SYSTEM POWER SUPPLY LINEUP

Component Number	Component Description	Power Supply		Normal Position	Actual Position	Initials/Date	Remarks
		Bus Number	Cubicle/Breaker				
2DRS-UC1A	Drywell Unit Cooler UC1A	2NHS-MCC011	4A	ON			
2DRS-UC1B	Drywell Unit Cooler UC1B	2NHS-MCC012	2A	ON			
2DRS-UC1C	Drywell Unit Cooler UC1C	2NHS-MCC011	5A	ON			
2DRS-UC1D	Drywell Unit Cooler UC1D	2NHS-MCC012	3A	ON			
2DRS-UC2A	Drywell Unit Cooler UC2A	2NHS-MCC011	4B	ON			
2DRS-UC2B	Drywell Unit Cooler UC2B	2NHS-MCC012	2B	ON			
2DRS-UC2C	Drywell Unit Cooler UC2C	2NHS-MCC011	5B	ON			
2DRS-UC2D	Drywell Unit Cooler UC2D	2NHS-MCC012	3B	ON			
2DRS-UC3A	Drywell Unit Cooler UC3A	2NHS-MCC011	4C	ON			
2DRS-UC3B	Drywell Unit Cooler UC3B	2NHS-MCC012	2C	ON			

TABLE II

SYSTEM POWER SUPPLY LINEUP

Component Number	Component Description	Power Supply		Normal Position	Actual Position	Initials/Date	Remarks
		Bus Number	Cubicle/Breaker				
Circuit 2DRSN02	LOCA Override Switch Circuit	2VBS-PNLB102	10	ON			
Circuit 2DRSN01	LOCA Override Switch Circuit	2VBS-PNLA101	30	ON			
2DRS-NBE11A(B)	UC3A(B) Vibration Circuits	2SCI-PNLC104	30	ON			
Circuit 2DRSA04	DRS Aux Ckt (CCP Valves Open)	2SCM*PNL102A	26	ON			
Circuit 2DRSB04	DRS Aux Ckt (CCP Valves Open)	2SCM*PNL302B	26	ON			
2DRS-TR10A 2DRS-TR10B	Temperature Recorders	2VBS-PNLB101	21	ON			
Circuit 2DRSA05	DRS Aux Circuit	2BYS-PNLA101	5	ON			
Circuit 2DRSB05	DRS Aux Circuit	2BYS-PNLB102	2	ON			