FARLEY NUCLEAR PLANT

ANNUNCIATOR RESPONSE PROCEDURE

FNP-0-ARP-8

SERVICE WATER STRUCTURE

PROCEDURE USAGE REQUIREMENTS	SECTIONS
CONTINUOUS USE - Each step of the procedure is to be read prior to performing that step. Each step is to be performed in the sequence given. Where required, each step is to be signed off as complete before proceeding to the next step.	
REFERENCE USE - The procedure is to be referred to periodically to confirm that all required parts of a work activity have been performed. Where required, steps are to be signed off to show that procedure requirements have been met.	ALL
INFORMATION USE - An activity may be performed from memory, but the procedure should be available for use as needed and for training.	

SAFETY RELATED

Approved:

C.O. [illegible]
Operations Manager

Date Issued: 10-21-93

OPS/ARP-30
DOC. 3/4/5

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02		X			X							
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00 LUBE WATER ΔP LOW TRAIN A	10 POND LEVEL HIGH	20 LUBE WATER STRN ΔP HI TRN A	30 SCREEN 1A ΔP HI
01 LUBE WATER ΔP LOW TRAIN B	11	21 LUBE WATER STRN ΔP HI TRN B	31 SCREEN 1B ΔP HI
02 CHLORINE SYSTEM ALARM	12 INST AIR PRESS LOW	22 SW STRN ΔP HI TRN A	32 AMBIENT TEMP HI
03 LOSS OF AIR TRN A WET PIT LVL INST	13 INST AIR RCVR CNDS LVL HI	23 SW STRN ΔP HI TRN B	33 AMBIENT TEMP LO
04 LOSS OF AIR TRN B WET PIT LVL INST	14 VAL BOX LEVEL HI TRN A	24 SW STRN MTR OVLD TRN A	34 EMERG RECIRC MOV OPEN TRN A

05 LOSS OF LUBE WATER SW PUMP	15 VALVE BOX LEVEL HI TRN B	25 SW STRN MTR OVLD TRN B	35 EMERG RECIRC MOV OPEN TRN B
06 UNIT 2 EMERG RECIRC MOV OPEN TRN A	16 UNIT 2 SW STRN ΔP HIGH TRN A	26 UNIT 2 SW STRN MTR OVLD TRN A	36 UNIT 2 LUBE WATER STRN ΔP HI TRN A
07 UNIT 2 EMERG RECIRC MOV OPEN TRN B	17 UNIT 2 SW STRN ΔP HIGH TRN B	27 UNIT 2 SW STRN MTR OVLD TRN B	37 UNIT 2 LUBE WATER STRN ΔP HI TRN B
08	18 UNIT 2 LUBE WATER ΔP LOW TRN A	28	38 RECIRC VLV BOX LVL HI TRN A
09	19 UNIT 2 LUBE WATER ΔP LOW TRN B	29	39 RECIRC VLV BOX LVL HI TRN B

LOCATION 00

SETPOINT: 10 psid decreasing differential.

ORIGIN: Q1P16PDS575

LUBE WATER
ΔP LOW
TRAIN A

PROBABLE CAUSE

Loss of cyclone separator.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

VERIFY SUFFICIENT LUBE AND COOLING WATER FOR ALL OPERATING PUMPS.

SUPPLEMENTARY ACTION

Notify operator to investigate and return cyclone separator to service per FNP-1-SOP-24.0, SERVICE WATER SYSTEM.

References: D-170113; C-170069, Sh. 2

LOCATION 01

SETPOINT: 10 psid decreasing differential.

ORIGIN: Q1P16PDS576

LUBE WATER
ΔP LOW
TRAIN B

PROBABLE CAUSE

Loss of cyclone separator.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

VERIFY SUFFICIENT LUBE AND COOLING WATER FOR ALL OPERATING PUMPS.

SUPPLEMENTARY ACTION

Notify operator to investigate and return cyclone separator to service per FNP-1-SOP-24.0, SERVICE WATER SYSTEM.

References: D-170113; C-170069, sh. 2

LOCATION 02

SETPOINT: 3 ppm in ambient air

ORIGIN: Service Water chlorination system chlorine detector

CHLORINE SYSTEM ALARM

PROBABLE CAUSE

1. Chlorine leak.
2. Loss of power to packaged chlorinator unit.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

IF A CHLORINE LEAK EXISTS, THEN EVACUATE SERVICE WATER BUILDING.

SUPPLEMENTARY ACTION

Notify appropriate personnel to investigate and repair.

References: D-170476; U-162930

LOCATION 03

SETPOINT: 12 psi decreasing

ORIGIN: QSP25PS563-A

LOSS OF AIR
TRAIN A WET PIT
LEV INST

PROBABLE CAUSE

1. Loss of SW instrument air compressors 1A and 1B.
2. Improper valve alignment.

AUTOMATIC ACTION

Switches to standby nitrogen supply.

IMMEDIATE ACTION

NONE

SUPPLEMENTARY ACTION

Notify operator to investigate and return the air compressors to service per FNP-0-SOP-24.2, SERVICE WATER AUXILIARY SYSTEMS.

References: D-170052; B-170270

LOCATION 04

SETPOINT: 12 psi decreasing

ORIGIN: QSP25PS564-B

LOSS OF AIR
TRAIN B WET PIT
LEV INST

PROBABLE CAUSE

1. Loss of SW building air compressors 1A and 1B.
2. Improper valve alignment.

AUTOMATIC ACTION

Switches to standby nitrogen supply.

IMMEDIATE ACTION

NONE

SUPPLEMENTARY ACTION

Notify operator to investigate and return the air compressors to service per FNP-0-SOP-24.2, SERVICE WATER AUXILIARY SYSTEMS.

References: D-170052; B-170270

LOCATION 05

LOSS OF
LUBE WATER
SW PUMP

SETPOINT: Lube supply valve in closed position.

ORIGIN: N1P16S501A (Q1P16V704A)
N1P16S501B (Q1P16V704B)
N1P16S501C (Q1P16V704C)
N1P16S501D (Q1P16V704D)

PROBABLE CAUSE

1. Closure of Unit One lube water supply valve(s).

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

1. DETERMINE WHICH UNIT ONE SERVICE WATER PUMPS ARE AFFECTED.
2. ATTEMPT TO OPEN AFFECTED PUMP(S) LUBE SUPPLY VALVE(S) BY FAILING AIR TO THEM.
3. SECURE ANY SERVICE WATER PUMPS WHICH CAN NOT BE SUPPLIED WITH LUBE WATER.

SUPPLEMENTARY ACTION

1. Start nonaffected pumps as required.
2. Notify appropriate personnel to investigate and repair malfunctioning equipment.
3. Refer to Tech Spec 3.7.4 for applicable LCO.

References: D-173186; A-170059, Sheets 199 thru 203

LOCATION 06

UNIT 2
EMERG RECIRC
MOV OPEN
TRAIN A

SETPOINT: 1. 40 PSIG Increasing
2. Hi-Hi Surge Tank Level 191'1"
3. Lo Dilution Press 7 Psig
4. Lo-Lo SW Pond Level

ORIGIN: 1. Q2P16PS560 Dilution Line Press
2. N2P16LS650 Surge Tank Level Switch
3. Q2P16PS686 Dilution Line Press
4. Q2P16LS550 SW Pond Level Switch

PROBABLE CAUSE

1. Valve Q2P16V539, SW A HDR EMERG RECIRC TO POND, open.
2. Inadvertent closure of SW HDR NORMAL DISCH ISO A TRN Q2P16V546.
3. Inadvertant closure of SW TO CW CANAL LCV Q2P16V560 or SW TO CW CANAL ISO Q2P16V550.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

VERIFY SERVICE WATER FLOW TO AUXILIARY AND CONTAINMENT BUILDING TRAIN A COMPONENTS. IF FLOW IS LOST, THEN REFER TO FNP-2-AOP-10, LOSS OF TRAIN A OR B SERVICE WATER.

SUPPLEMENTARY ACTION

1. Verify proper Train A Service Water valve and pump alignment per FNP-2-SOP-24.0, SERVICE WATER SYSTEM.
2. IF condition persists, THEN notify appropriate personnel to investigate and repair.

References: D-200013

LOCATION 07

UNIT 2
EMERG RECIRC
MOV OPEN
TRAIN B

SETPOINT: 1. 40 PSIG Increasing
2. Hi-Hi Surge Tank Level 189' 7"
3. Lo Dilution Press 7 Psig
4. Lo-Lo SW Pond Level

ORIGIN: 1. Q2P16PS559 Dilution Line Press
2. N2P16LS650 Surge Tank Level Switch
3. Q2P16PS685 Dilution Line Press
4. Q2P16LS585 SW Pond Level Switch

PROBABLE CAUSE

1. Valve Q2P16V538 SW B HDR EMERG RECIRC TO POND, open.
2. Inadvertant closure of SW TO DISCH HDR NORMAL ISO B TRN Q2P16V545.
3. Inadvertant closure of SW TO CW CANAL LCV Q2P16V560 or SW TO CW CANAL ISO Q2P16V550.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

VERIFY SERVICE WATER FLOW TO AUXILIARY AND CONTAINMENT BUILDING TRAIN A COMPONENTS. IF FLOW IS LOST, THEN REFER TO FNP-2-AOP-10, LOSS OF TRAIN A OR B SERVICE WATER.

SUPPLEMENTARY ACTION

1. Verify proper Train B Service Water valve and pump alignment per FNP-2-SOP-24.0, SERVICE WATER SYSTEM.
2. IF condition persists, THEN notify appropriate personnel to investigate and repair.

References: D-200013

LOCATION 10

SETPOINT: 185' 9"

ORIGIN: NSP25LR4106A and B, Pond Level Recorders

POND
LEVEL
HI

PROBABLE CAUSE

1. Extremely heavy precipitation.
2. River Water pumps running in local control.
3. Failure of SW wet pit level switches QSP25LS510 and QSP25LS511.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

REDUCE THE NUMBER OF RUNNING RIVER WATER PUMPS AS REQUIRED TO RETURN SW POND TO NORMAL LEVEL.

SUPPLEMENTARY ACTION

1. Monitor pond level.
2. WHEN pond drops below 185' 6", THEN return river water pumps to service per FNP-0-SOP-25.0, RIVER WATER SYSTEM, as necessary to maintain pond level between 185' 0" and 185' 6".
3. Notify maintainence to perform FNP-O-STP-611.0 if pond level reaches 187' 0".
4. Ensure performance of Operations procedure FNP-0-ETP-1036, SERVICE WATER DAM AND STRUCTURE WEEKLY INSPECTION, if pond level reaches 187'0".

References: D-170119; D-173186; FSAR, section 9.2.

LOCATION 12

SETPOINT: 35 psig

ORIGIN: N1P19PS517, Service Water Instrument Air Header Pressure Switch.

INST AIR
PRESS LOW

PROBABLE CAUSE

Loss of SW instrument air compressors 1A and 1B.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

NONE

SUPPLEMENTARY ACTION

1. Notify operator to investigate and return the air compressors to service per FNP-0-SCP-24.2, SERVICE WATER AUXILIARY SYSTEMS.

References: D-170052;PCN S91-1-7735; PCN S91-2-7736

LOCATION 13

SETPOINT: 9" Below Centerline

ORIGIN: N1P19LS521 and 522, air compressor receiver level switches.

INST AIR
REC CNDS
LEVEL HI

PROBABLE CAUSE

Improper drainage from the air receiver.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

MANUALLY DRAIN THE AIR RECEIVER.

SUPPLEMENTARY ACTION

1. Notify appropriate personnel to investigate and repair drain.
2. IF necessary, THEN the air compressor can still be operated, but the air receiver must be drained periodically.

References: D-170052

LOCATION 14

SETPOINT: 7 3/8 inches

ORIGIN: Train A River Water Valve Box
Level Switch QSP25LS533

VALVE BOX
LEVEL HIGH
TRAIN A

PROBABLE CAUSE

1. Pipe break.
2. Valve leakage.
3. Heavy precipitation.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

1. DISPATCH OPERATOR TO INSPECT VALVE BOX FOR INLEAKAGE.
2. IF INSPECTION REVEALS A PIPE BREAK OR VALVE LEAKAGE, THEN SHUTDOWN THE A TRAIN RIVER WATER SYSTEM.
3. IF WATER IS FROM PRECIPITATION OR GROUND LEAKAGE, THEN PREPARE A TEMPORARY PUMP AND PUMP OUT THE VALVE BOX.

SUPPLEMENTARY ACTION

1. Monitor pond level and start additional Train B river water pumps as necessary to maintain pond level between 185' 0" and 185' 6".
2. Refer to FNP-1-ARP-1.1, MAIN CONTROL BOARD ANNUNCIATOR PANEL A, AD2.
3. Notify appropriate personnel to investigate and repair.
4. Refer to Technical Specifications for LCO requirements.

References: D-170119; C-170586; Tech. Specs.

LOCATION 15

SETPOINT: 7 3/8 inches

ORIGIN: Train B River Water Valve Box
Level Switch QSP25LS534

VALVE BOX
LEVEL HIGH
TRAIN B

PROBABLE CAUSE

1. Pipe break.
2. Valve leakage.
3. Heavy precipitation.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

1. DISPATCH OPERATOR TO INSPECT VALVE BOX FOR INLEAKAGE.
2. IF INSPECTION REVEALS A PIPE BREAK OR VALVE LEAKAGE, THEN SHUTDOWN THE A TRAIN RIVER WATER SYSTEM.
3. IF WATER IS FROM PRECIPITATION OR GROUND LEAKAGE, THEN PREPARE A TEMPORARY PUMP AND PUMP OUT THE VALVE BOX.

SUPPLEMENTARY ACTION

1. Monitor pond level and start additional Train B river water pumps as necessary to maintain pond level between 185' 0" and 185' 6".
2. Refer to FNP-1-ARP-1.1, MAIN CONTROL BOARD ANNUNCIATOR PANEL A, AD3.
3. Notify appropriate personnel to investigate and repair.
4. Refer to Technical Specifications for LCO requirements.

References: D-170119; C-170587; Tech. Specs.

LOCATION 16

SETPOINT: 6 PSI Increasing ΔP

ORIGIN: A Trn SW Strainer ΔP
Switch Q2P16PDS562

UNIT 2
SW STRN
ΔP HIGH
TRN A

PROBABLE CAUSE

Clogged strainer.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

1. PLACE A TRAIN SERVICE WATER STRAINER BACKWASH SYSTEM IN SERVICE AS FOLLOWS:
   1.1 ENSURE STRAINER MOTOR Q2P16M501A ENERGIZED BY VERIFYING HANDSWITCH Q2P16G512A IN START.
   1.2 FULLY OPEN STRAINER BACKWASH TO SUMP VALVE Q2P16V571 FOR ~ ONE MINUTE, THEN RETURN THE VALVE TO ITS ORIGINAL POSITION.
2. IF ALARM DOES NOT CLEAR, THEN PERFORM THE FOLLOWING:
   2.1 OPEN A TRAIN STRAINER BYPASS VALVE Q2P16V513.
   2.2 CLOSE SW HDR DISCH ISO A TRN Q2P16V511.

SUPPLEMENTARY ACTION

Notify operator to investigate and clear the strainer.

References: D-200013; B-200219, sh. 44

LOCATION 17

SETPOINT: 6 PSI Increasing ΔP

ORIGIN: B Trn SW Strainer ΔP
Switch Q2P16PDS572

UNIT 2
SW STRN
ΔP HIGH
TRN B

PROBABLE CAUSE

Clogged strainer.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

1. PLACE B TRAIN SERVICE WATER STRAINER BACKWASH SYSTEM IN SERVICE AS FOLLOWS:
   1.1 ENSURE STRAINER MOTOR Q2P16M501B ENERGIZED BY VERIFYING HANDSWITCH Q2P16G512B IN START.
   1.2 FULLY OPEN STRAINER BACKWASH TO SUMP VALVE Q2P16V568 FOR ~ ONE MINUTE, THEN RETURN THE VALVE TO ITS ORIGINAL POSITION.
2. IF ALARM DOES NOT CLEAR, THEN PERFORM THE FOLLOWING:
   2.1 OPEN B TRAIN STRAINER BYPASS VALVE Q2P16V510.
   2.2 CLOSE SW HDR DISCH ISO B TRN Q2P16V508.

SUPPLEMENTARY ACTION

Notify operator to investigate and clear the strainer.

References: D-200013; B-200219, sh. 45

LOCATION 18

SETPOINT: 10 psid decreasing differential.

ORIGIN: Q2P16PDS575B

UNIT 2
LUBE WATER
ΔP LOW
TRAIN A

PROBABLE CAUSE

Loss of cyclone separator.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

VERIFY SUFFICIENT LUBE AND COOLING WATER FOR ALL OPERATING PUMPS.

SUPPLEMENTARY ACTION

1. Notify operator to investigate and return cyclone separator to service per FNP-2-SOP-24.0, SERVICE WATER SYSTEM.
2. IF the service water pumps are required to be operated without lube and cooling water, THEN increase vibration monitoring and coordinate with maintenance personnel to determine the necessary frequency.

References: D-170113; C-170069, sh. 2

LOCATION 19

SETPOINT: 10 psid decreasing differential.

ORIGIN: Q2P16PDS576B

UNIT 2
LUBE WATER
ΔP LOW
TRAIN B

PROBABLE CAUSE

Loss of cyclone separator.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

VERIFY SUFFICIENT LUBE AND COOLING WATER FOR ALL OPERATING PUMPS.

SUPPLEMENTARY ACTION

1. Notify operator to investigate and return cyclone separator to service per FNP-2-SOP-24.0, SERVICE WATER SYSTEM.
2. IF the service water pumps are required to be operated without lube and cooling water, THEN increase vibration monitoring and coordinate with maintenance personnel to determine the necessary frequency.

References: D-170113; C-170069, sh. 2

LOCATION 20

SETPOINT: 8 psid increasing

ORIGIN: Train A Lube Water Strainer
Δ pressure switch, N1P16PDS631.

LUBE WATER
STRN
Δ HI
TRAIN A

PROBABLE CAUSE

Clogged strainer.

AUTOMATIC ACTION

At 4 psid, the strainer automatic backwash cycle begins.

IMMEDIATE ACTION

1. VERIFY THAT THE TRAIN B HEADER IS SUPPLYING SUFFICIENT LUBE AND COOLING WATER FOR ALL OPERATING PUMPS.

SUPPLEMENTARY ACTION

1. Notify operator to investigate and clear strainer.

References: D-170113

LOCATION 21

SETPOINT: 8 psid increasing

ORIGIN: Train B Lube Water Strainer
Δ pressure switch, N1P16PDS632.

LUBE WATER STRN Δ HI TRAIN B

PROBABLE CAUSE

Clogged strainer.

AUTOMATIC ACTION

At 4 psid, the strainer automatic backwash cycle begins.

IMMEDIATE ACTION

1. VERIFY THAT THE TRAIN A HEADER IS SUPPLYING SUFFICIENT LUBE AND COOLING WATER FOR ALL OPERATING PUMPS.

SUPPLEMENTARY ACTION

1. Notify operator to investigate and clear strainer.

References: D-170113

LOCATION 22

SETPOINT: 6 psi increasing

ORIGIN: SW strainer Δ pressure switch Q1P16PDS562

SERV WATER
STR Δ PRESS
HI TRAIN A

PROBABLE CAUSE

Clogged strainer.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

1. PLACE A TRAIN SERVICE WATER STRAINER BACKWASH SYSTEM IN SERVICE AS FOLLOWS:
   1.1 ENSURE STRAINER MOTOR Q1P16M501A ENERGIZED BY VERIFYING HANDSWITCH Q1P16G512A IN START.
   1.2 FULLY OPEN STRAINER BACKWASH TO SUMP VALVE Q1P16V571 FOR ~ ONE MINUTE, THEN RETURN THE VALVE TO ITS ORIGINAL POSITION.
2. IF ALARM DOES NOT CLEAR, THEN PERFORM THE FOLLOWING:
   2.1 OPEN A TRAIN STRAINER BYPASS VALVE Q1P16V513.
   2.2 CLOSE SW HDR DISCH ISO A TRN Q1P16V511.

SUPPLEMENTARY ACTION

Notify operator to investigate and clear the strainer.

References: D-170119

LOCATION 23

SETPOINT: 6 psi increasing

ORIGIN: SW strainer Δ pressure switch Q1P16PDS572

SERV WATER
STR Δ PRESS
HI TRAIN B

PROBABLE CAUSE

Clogged strainer.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

1. PLACE B TRAIN SERVICE WATER STRAINER BACKWASH SYSTEM IN SERVICE AS FOLLOWS:
   1.1 ENSURE STRAINER MOTOR Q1P16M501B ENERGIZED BY VERIFYING HANDSWITCH Q1P16G512B IN START.
   1.2 FULLY OPEN STRAINER BACKWASH TO SUMP VALVE Q1P16V568 FOR ~ ONE MINUTE, THEN RETURN THE VALVE TO ITS ORIGINAL POSITION.
2. IF ALARM DOES NOT CLEAR, THEN PERFORM THE FOLLOWING:
   2.1 OPEN B TRAIN STRAINER BYPASS VALVE Q1P16V510.
   2.2 CLOSE SW HDR DISCH ISO E TRN Q1P16V508.

SUPPLEMENTARY ACTION

Notify operator to investigate and clear the strainer.

References: D-170119

LOCATION 24

SETPOINT: N/A

ORIGIN: Contacts on Breaker FK-A3.

SERV WATER
STR MOT OVLD
TRAIN A

PROBABLE CAUSE

Motor overcurrent.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

NONE

SUPPLEMENTARY ACTION

Notify appropriate personnel to investigate and repair.

References: D-170119

LOCATION 25

SETPOINT: N/A

ORIGIN: Contacts on Breaker FL-A3

SERV WATER
STR MOT OVLD
TRAIN B

PROBABLE CAUSE

Motor overcurrent.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

NONE

SUPPLEMENTARY ACTION

Notify appropriate personnel to investigate and repair.

References: D-170119

LOCATION 26

SETPOINT: N/A

ORIGIN: Contacts on Breaker FKA2

UNIT 2
SW STRN
MTR OVLD
TRN A

PROBABLE CAUSE

1. Motor overcurrent.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

NONE

SUPPLEMENTARY ACTION

1. Notify appropriate personnel to investigate and repair.

References:

LOCATION 27

SETPOINT: N/A

ORIGIN: Contacts on Breaker FLA2

UNIT 2
SW STRN
MTR OVLD
TRN B

PROBABLE CAUSE

1. Motor overcurrent.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

NONE

SUPPLEMENTARY ACTION

1. Notify appropriate personnel to investigate and repair.

References:

LOCATION 30

SETPOINT: 10 inches differential water level across the screen.

ORIGIN: Screen Δ level controller NSW32L502A

SCREEN 1A
Δ PRESS
HI

PROBABLE CAUSE

Improper operation of screen wash system.

AUTOMATIC ACTION

At 6" level differential the screen wash system begins automatic operation.

IMMEDIATE ACTION

1. VERIFY SCREEN WASH SYSTEM IS ALIGNED FOR AUTO OPERATION.
2. IF NECESSARY, THEN THE SCREEN WASH SYSTEM CAN BE OPERATED IN MANUAL PER FNP-0-SOP-24.2, SERVICE WATER AUXILIARY SYSTEMS.

SUPPLEMENTARY ACTION

1. Correct cause of automatic malfunction and return screen wash system to proper operation per FNP-0-SOP-24.2, SERVICE WATER AUXILIARY SYSTEMS.

References: C-170069, sh. 2

LOCATION 31

SETPOINT: 10 inches differential water level across the screen.

ORIGIN: Screen Δ level controller NSW32L502A

SCREEN 1B
Δ PRESS
HI

PROBABLE CAUSE

Improper operation of screen wash system.

AUTOMATIC ACTION

At 6" level differential the screen wash system begins automatic operation.

IMMEDIATE ACTION

1. VERIFY SCREEN WASH SYSTEM IS ALIGNED FOR AUTO OPERATION.
2. IF NECESSARY, THEN THE SCREEN WASH SYSTEM CAN BE OPERATED IN MANUAL PER FNP-0-SOP-24.2, SERVICE WATER AUXILIARY SYSTEMS.

SUPPLEMENTARY ACTION

1. Correct cause of automatic malfunction and return screen wash system to proper operation per FNP-0-SOP-24.2, SERVICE WATER AUXILIARY SYSTEMS.

References: C-170069, sh. 2

LOCATION 32

SETPOINT: 106°F

ORIGIN: Various temperature detectors in the Service Water Building.

AMBIENT TEMPERATURE HIGH

PROBABLE CAUSE

Insufficient ventilation.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

NONE

SUPPLEMENTARY ACTION

1. Dispatch personnel to the Service Water Structure to investigate the cause of the alarm.
2. IF high ambient temperature is the cause of the alarm, THEN perform the following:

   a) Attempt to run existing ventilators in manual or auto as applicable.
   b) Have Maintenance investigate any ventilators that will not run.
   c) Monitor for Service Water pump motor oil level and color. For any Service Water pump motor that experiences oil discoloration during the high ambient temperature event, have the oil changed as soon as possible.
3. IF all 3 ventilators for either pump room are inoperable coincident with a high ambient temperature alarm, THEN access the SWIS roof and chain open the exhaust dampers. Evaluate the loss of forced ventilation and its affects on Service Water components.
4. Install temporary ventilation in the affected areas, if needed.
3. Correct cause of the alarm and return ventilation system to normal operation per FNP-0-SOP-53.0, SERVICE WATER BUILDING HEATING AND VENTILATION.

References: D-170332

LOCATION 33

SETPOINT: 35°F

ORIGIN: Various temperature detectors in the Service Water Building.

AMBIENT TEMPERATURE LOW

PROBABLE CAUSE

Insufficient heating.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

NONE

SUPPLEMENTARY ACTION

1. Dispatch personnel to the Service Water Structure to investigate the cause of the alarm.
2. IF low ambient temperature is the cause of the alarm, THEN attempt to run existing heaters in manual or auto as applicable. Have Maintenance investigate any inoperable heaters.
3. Verify the exhaust dampers are not chain opened.
4. Install temporary ventilation in the affected areas, as needed.
3. Correct the cause of the alarm and return the heating system to normal operation per FNP-0-SOP-53.0, SERVICE WATER BUILDING HEATING AND VENTILATION.

References: D-170332

LOCATION 34

EMER RECIRC
MOV OPEN
TRAIN A

SETPOINT: 1. 40 PSIG increasing
2. Hi Hi Surge Tank Level 191'1"
3. Lo Dilution Press 7 psig
4. Lo-Lo SW Pond Level

ORIGIN: 1. Q1P16PS560 Dilution Line Press
2. N1P16LS687 Surge Tank Level Switch
3. Q1P16PS685 Dilution Line Press
4. Q1P16LS550 SW Pond Level Switch

PROBABLE CAUSE

1. Valve Q1P16V539, SW A HDR EMERG RECIRC TO POND, open.
2. Inadvertant closure of SW HDR NORMAL DISCH ISO A TRN Q1P16V546.
3. Inadvertant closure of SW to canal makeup valves.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

VERIFY SERVICE WATER FLOW TO AUXILIARY AND CONTAINMENT BUILDING TRAIN A COMPONENTS. IF FLOW IS LOST, THEN REFER TO FNP-1-AOP-10, LOSS OF TRAIN A OR B SERVICE WATER.

SUPPLEMENTARY ACTION

1. Verify proper Train A service water valve and pump alignment per FNP-1-SOP-24.0, SERVICE WATER SYSTEM.
2. IF condition persists, THEN notify appropriate personnel to investigate and repair.

References: D-170119

LOCATION 35

EMER RECIRC
MOV OPEN
TRAIN B

SETPOINT: 1. 40 PSIG increasing
2. Hi Hi Surge Tank Level 189'7"
3. Lo Dilution Press 7 psig
4. Lo-Lo SW Pond Level

ORIGIN: 1. Q1P16PS559 Dilution Line Press
2. N1P16LS687 Surge Tank Level Switch
3. Q1P16PS686 Dilution Line Press
4. Q1P16LS585 SW Pond Level Switch

PROBABLE CAUSE

1. Valve Q1P16V538, SW B HDR EMERG RECIRC TO POND, open.
2. Inadvertant closure of SW DISCH HDR NORMAL ISO B TRN Q1P16V545.
3. Inadvertant closure of SW to canal makeup valves.

AUTOMATIC ACTION

NONE

IMMEDIATE ACTION

VERIFY SERVICE WATER FLOW TO AUXILIARY AND CONTAINMENT BUILDING TRAIN B COMPONENTS. IF FLOW IS LOST, THEN REFER TO FNP-1-AOP-10, LOSS OF TRAIN A OR B SERVICE WATER.

SUPPLEMENTARY ACTION

1. Verify proper Train B service water valve and pump alignment per FNP-1-SOP-24.0, SERVICE WATER SYSTEM.
2. IF condition persists, THEN notify appropriate personnel to investigate and repair.

References: D-170119

LOCATION 36

SETPOINT: 8 psid increasing

ORIGIN: Train A Lube Water Strainer
Δ pressure switch, N2P16PDS631

UNIT 2
LUBE WATER
STRN
Δ HI
TRAIN A

PROBABLE CAUSE

Clogged strainer.

AUTOMATIC ACTION

At 4 psid, the strainer automatic backwash cycle begins.

IMMEDIATE ACTION

1. VERIFY THAT THE TRAIN B HEADER IS SUPPLYING SUFFICIENT LUBE AND COOLING WATER FOR ALL OPERATING PUMPS.

SUPPLEMENTARY ACTION

1. Notify operator to investigate and clear strainer.

References: D-170113

LOCATION 37

SETPOINT: 8 psid increasing

ORIGIN: Train B Lube Water Strainer
Δ pressure switch, N2P16PDS632

UNIT 2
LUBE WATER
STRN
Δ HI
TRAIN B

PROBABLE CAUSE

Clogged strainer.

AUTOMATIC ACTION

At 4 psid, the strainer automatic backwash cycle begins.

IMMEDIATE ACTION

1. VERIFY THAT THE TRAIN A HEADER IS SUPPLYING SUFFICIENT LUBE AND COOLING WATER FOR ALL OPERATING PUMPS.

SUPPLEMENTARY ACTION

1. Notify operator to investigate and clear strainer.

References: D-170113

LOCATION 38

SETPOINT: 10" from bottom of flange

ORIGIN: LS509

RECIRC VLV
BOX LVL HI
TRN A

PROBABLE CAUSE

Excessive drainage/leakage into valve box.

AUTOMATIC ACTION

1. Starts sump pump.

IMMEDIATE ACTION

1. VERIFY AUTOMATIC ACTION.

SUPPLEMENTARY ACTION

1. Investigate valve box for source of water.
2. IF necessary, THEN provide temporary pump to assist in water removal.
3. IF high level due to service water leakage, THEN notify appropriate personnel to investigate and repair.

References: D-200013

LOCATION 39

SETPOINT: 10" from bottom of flange

ORIGIN: LS510

RECIRC VLV
BOX LVL HI
TRN B

PROBABLE CAUSE

1. Excessive drainage/leakage into valve box.

AUTOMATIC ACTION

1. Starts sump pump.

IMMEDIATE ACTION

1. VERIFY AUTOMATIC ACTION.

SUPPLEMENTARY ACTION

1. Investigate valve box for source of water.
2. IF necessary, THEN provide temporary pump to assist in water removal.
3. IF high level due to service water leakage, THEN notify appropriate personnel to investigate and repair.

References: D-200013