CWI-4.3 3/25/91

SOFTWARE REQUIREMENT SPECIFICATION (SRS)

CFN: ERDS-SRS-1.00-1

SR:__ QA: XX CR:__ NQA:_

TITLE: EMERGENCY RESPONSE DATA SYSTEM

Propared by: Russ Van Dell

(ERDS) DATA POINT LIBRARY

Date Issued: April 14,1992

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D.7.5kz		
Reviewed Py: 0.T. Sofge	Date:	4/21/92
Approved By: CE Van De 200	Date:	:/21/92

Date: Reactor Unit: Data Feeder: NRC ERDS Parameter: Point ID: Analog/Digital Engr Units/Dig States: Engr Units Conversion: Minimum Instr Range: Maximum Instr Range: Zero Point Reference: Reference Point Notes: PROC or SENS: Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation For DP Transmitters: Level Reference Leg: Unique System Desc.:

01/07/92 MO1 PCS NI POWER RNG C51C4001 Plant Spec Point Desc.: AVERAGE CONSISTENT APRM READING Generic/Cond Desc.: NUCLEAR INSTRUMENTS, POWER RANGE A % N/A 125 N/A Number of Sensors:

How Processed:
Sensor Location:
Alarm/Trip Set Points:
NI Detector Power Level:

APRM UTILIZE 24 L. MS LOCATED IN CORE
HI-HI TRIP=(.58W+62%), W=%RECIRC FLOW
N/A
Cut-off Power Level:

N/A

DOWNSCALE(3%), INOP, BYPASS

N/A This point consists of either an average of all consistent APRMs or an average of in-range APRMs if there are less than the required number of consistent signals. APRM3(Average Power Range Monitors) consist of an average of 24 LPRMs (Local Power Range Monitors). Each individual APRM signal will fail on Downscale (3%), Imop, or Bypass. HI-HI trip feed RPS SCRAM for one-out-of-three-twice logic. HI trip (.58W+50%) results in Rod Withdraw Block.

Date:

Reactor Unit: Data Feeder:

NRC ERDS Parameter: NI INTER RNG

Point ID:

Analog/Digital

Engr Units/Dig States:

That Units Conversion:

Minimum Instr Range:

Maximum Instr Range:

Zero Point Reference:

Reference Point Notes:

PRCC or SENS:

Number of Sensors:

How Processed:

Sensor Location:

Alarm/Trip'Set Points:

NI Detector Power Supply

Cut-off Power Level:

NI Detector Power Supply

Turn-on Power Level:

Instrument Failure Mode:

Temperature Compensation

For DP Transmitters:

Level Reference Leg:

Unique System Desc.:

01/07/92

M01

PCS

Plant Spec Point Desc.: (not available)
Generic/Cond Desc.: NUCLEAR INSTRUMENTS, INTERMEDIATE RANGE

Not available to Process Computer System.

Date:

Reactor Unit:

Data Feeder:

NRC ERDS Parameter: NI SOURC RNG

Point ID:

Analog/Digital

Engr Units/Dig States:

Enar Units Conversion:

Minimum Instr Range:

Maximum Instr Range:

Zero Point Reference:

Reference Point Notes:

PROC or SENS:

Number of Sensors:

How Processed:

Sensor Location:

Alarm/Trip Set Points:

NI Detector Power Supply

Cut-off Power Level:

NI Detector Power Supply

Turn-on Power Level:

Instrument Failure Mode:

Temperature Compensation

For DP Transmitters:

Level Reference Leg:

Unique System Desc.:

01/07/92

MO1

PCS

Plant Spec Point Desc.: (not available)
Generic/Cond Desc.: NUCLEAR INSTRUMENTS, SOURCE RANGE

Not available to Process Computer System.

Date:

Reactor Unit:

Cut-off Power Level:

NI Detector Power Supply N/A Turn-on Power Level:

Instrument Failure Mode:

Temperature Compensation N/A

For DP Transmitters: Level Reference Leg:

Unique System Desc.:

01/07/92

MO1

Reactor Unit:
Data Feeder:
NRC ERDS Parameter:
Point ID:
Plant Spec Point Desc.:
Generic/Cond Desc.:
Analog/Digital
Engr Units/Dig States:
Engr Units Conversion:
M/A
Minimum Instr Range:
Zero Point Reference:
Reference Point Notes:
PROC or SENS:
Number of Sensors:
How Processed:
Sensor Location:
Alarm/Trip Set Points:
NI Detector Power Supply
Cut-off Power Level:

MO1
PCS
MEACTOR VESSEL WATER LEVEL
REACTOR VESSEL WATER LEV

+280* TOP OF REACTOR HEAD

This point consists of either a weighted average of all consistent level indicators or an average of in-range level indicators if there are less than the required number of consistent signals. Algorithm performs temperature compensation and evaluates reference leg flashing on 7 level signals. Safeguards Levels (-50* to 50*) utilize cold reference leg design outside of drywell. ECCS levels (-335" to 65") are invalidated with recirc pumps running. Other levels include 2 feedwater (0 to 60°) and 1 vessel flood (-50° to 350").

Date:

Reactor Unit: Data Feeder:

NRC ERDS Parameter:

Foint ID: C51C9001

Plant Spec Point Desc.: SMOOTHED FEEDWATER FLOW LOOP A

Generic/Cond Desc.: FEEDWATER FLOW INTO THE REACTOR SYSTEM

Analog/Digital A

Engr Units/Dig States: MLB/HR

Engr Units Conversion: N/A

Minimum Instr Range: 0

Minimum Instr Range:

Maximum Instr Range: Zero Point Reference:

Reference Point Notes: N/A

PROC or SENS:

Number of Sensors:

NI Detector Power Supply

Cut-off Power Level: NI Detector Power Supply

Turn-on Power Level:

Instrument Failure Mode: HI/LOW SENSOR

Temperature Compensation N/A For DP Transmitters:

Level Reference Leg:

Unique System Desc.:

01/07/92

MO1

PCS

MAIN FD FLOW

N/A

How Processed:
SMOOTHED FW FLOW CALC FROM A NOZZIJE D/P
Sensor Location:
FW NOZZLE IS DOWNSTREAM OF RX FW PUMPS
Alarm/Trip Set Points:
N/A

N/A

N/A

N/A

N/A

SMOOTHED FW FLOW LOOP A is calculated using Feedwater nozzle D/P, Pressure, and temperature. Smoothing algorithm sums 1/12 current sample + 11/12 of previous smoothed value. Sampling frequency is 5 seconds. Feedwater nozzles are located downstream of Reactor Feedwater Pumps and ahead of high pressure heaters.

Date:

Reactor Unit: Data Feeder:

Data Feeder:

NRC ERDS Parameter:

Point ID:

Plant Spec Point Desc.:

Generic/Cond Desc.:

Analog/Digital

Engr Units/Dig States:

Engr Units Conversion:

MAIN FD FLOW

C51C9002

SMOOTHED FEEDWATER FLOW LOOP B

FEEDWATER FLOW INTO THE REACTOR SYSTEM

A

MLB/HR

Engr Units Conversion:

N/A

Minimum Instr Range:

0 Minimum Instr Range:

Maximum Instr Range: Zero Point Reference: N/A
Reference Point Notes: N/A

PROC or SENS:

Cut-off Power Level:

NI Detector Power Supply Turn-on Power Level:

Instrument Failure Mode:

Temperature Compensation N/A

For DP Transmitters: Level Reference Leg: Unique System Desc.:

01/07/92 MO1

PCS

Number of Sensors:

How Processed:
Sensor Location:
Alarm/Trip Set Points:
N/A
NI Detector Power Supply

N/A

Sensor Location:
N/A
N/A
N/A
N/A

N/A

HI/LOW SENSOR

N/A N/A

SMOOTHED FW FLOW LOOP B is calculated using Feedwater nozzle D/P, Pressure, and temperature. Smoothing algorithm sums 1/12 current sample + 11/12 of previous smoothed value. Sampling frequency is 5 seconds. Feedwater nozzles are located downstream of Reactor Feedwater Pumps and ahead of high pressure heaters.

Date:

Data Feeder:

NRC ERDS Parameter:

Point ID:

Plant Spec Point Desc.:

Generic/Cond Desc.:

Analog/Digital

Engr Units/Dig States:

Engr Units Conversion:

MO1

RCIC FLOW

RCI100

RCIC PUMP DISCHARGE FLOW

REACTOR CORE ISOLATION COOLING

Analog/Digital

A

Engr Units/Dig States:

GPM

Engr Units Conversion:

M/A

Minimum Instr Range:

Maximum Instr Range:

Zero Point Reference:

Reference Point Notes:

N/A

PROC or SENS:

Number of Sensors:

1

Number of Sensors:

How Processed:
Signal INPUT FROM FLOW TRANSMITTER
FLOW ELEMENT ON RCIC PUMP DISHARGE
NI Detector Power Supply
N/A
Cut-off Power Level: Cut-off Power Level:

NI Detector Power Supply N/A Turn-on Power Level:

Instrument Failure Mode: HIGH & LOW SENSOR Temperature Compensation N/A

For DP Transmitters: Level Reference Leg:

Unique System Desc.:

01/07/92

containment.

N/A

N/A

RCIC is a steam turbine driven pump designed to deliver 400 gpm over reactor pressure range of 150-1120 psig. Flow element is located on pump disharge line ahead of the test return line to the CST tanks and injection line into "A" feedwater line. RCIC injects into feedwater line prior to the line entering

Date:

Reactor Unit:

Data Feeder:

NRC ERDS Parameter: LPCI FLOW

PROC or SENS:

Cut-off Power Level:

NI Detector Power Supply N/A

Turn-on Power Level:

Instrument Failure Mode: HIGH & LOW SENSOR

Temperature Compensation N/A
For DP Transmitters: N/A

Level Reference Leg:

Unique System Desc.:

01/07/92

MO1

PCS

NRC ERDS Parameter:

Point ID:

Plant Spec Point Desc.:

Generic/Cond Desc.:

Analog/Digital

Engr Units/Dig States:

Engr Units Conversion:

Minimum Instr Range:

Maximum Instr Range:

Zero Point Reference:

RHR100

CONTAINMENT SPRAY/COOLING A LOOP

LOW PRESSURE COOLANT INJECTION FLOW

A

A

Engr Units/Dig States:

GPM

N/A

Minimum Instr Range:

10000

Zero Point Reference:

N/A

Reference Point Notes:

N/A

Number of Sensors:

How Processed:
Signal Input From Flow Transmitter
Sensor Location:
DISCHARGE OF RHR HEAT EXCHANGERS
Alarm/Trip Set Points:
N/A
NI Detector Power Supply
N/A

N/A

CONTAINMENT SPRAY/COOLING A LOOP flow is the RHR flow to the A loop drywell spray, torus spray and torus cooling. Each RHR pump is approximately rated at 4000 gpm depending on system head. Two pumps are located in each loop although flow can be cross tied between A and B loops.

Date:

Date: 01/07/92
Reactor Unit: MO1
Data Feeder: PCS
NRC ERDS Parameter: LPCI FLOW
Point ID: RHR101
Plant Spec Point Desc.: CONTAINMENT SPRAY/COOLING B LOOP
Generi Cond Desc.: LOW PRESSURE COOLANT INJECTION FLOW
Analog/Digital A
Engr Units/Dig States: GPM
Engr Units Conversion: N/A
Minimum Instr Range: 0
Maximum Instr Range: 10000
Zero Point Reference: N/A
Reference Point Notes: N/A
PROC or SENS: S

PROC or SENS: Number of Sensors:

How Processed:
Sensor Location:
Alarm/Trip Set Points:
N/A
NI Detector Power Supply
N/A

Cut-off Power Level: NI Detector Power Supply N/A

Turn-on Power Level: Instrument Failure Mode: HIGH & LOW SENSOR

Temperature Compensation N/A
For DP Transmitters: N/A
Level Reference Leg: N/A Unique System Desc.:

01/07/92

N/A CONTAINMENT SPRAY/COOLING B LOOP flow is the RHR flow to the B loop drywell spray, torus spray and torus cooling. Each RHR pump is approximately rated at 4000 gpm depending on system head. Two pumps are located in ec h loop although flow can be

cross tied between A and B loops.

Date:

Reactor Unit: Data Feeder:

Data Feeder:

NRC ERDS Farameter:

Point ID:

Point Spec Point Desc.:

Generic/Cond Desc.:

Analog/Digital

Engr Units/Dig States:

Engr Units Conversion:

Minimum Instr Range:

Maximum Instr Range

Zero Foint Referenc:

N/A

Reference Point Notes:

N/A

PROC or SENS:

PCS

LDC FLOW

RHR102

RHR LOOP A INJECT FLOW

LOW PRESSURE COOLANT INJECTION FLOW

AN INJECTION FLOW

A N/A

A N/A

N/A

Reference Point Notes:

N/A

S

PROC or SENS:

Number of Sensors:

How Processed:
Sensor Location:
Sensor Location:
Alarm/Trip Set Points:
N/A
NI Detector Power Supply
N/A Cut-off Power Level:

NI Detector Power Supply N/A

Turn-on Power Level: Instrument Failure Mode:

Temperature Compensation N/A
For DP Transmitters: N/A

Level Reference Leg: Unique System Desc.: 01/07/92

MO1 PCS

HIGH & LOW SENSOR

N/A

RHR LOOP A INJECT FLOW is the RHR flow to the A Recirc Loop, Reactor Head Cooling, Waste Surge Tank, and cross tie to B Loop. Each RHP pump is rated at about 4000 gpm depending on system head. Two pumps are located in each loop although flow can be cross tied between A and B loops.

Date:

Data Feeder: PCS
NRC ERDS Parameter: LPCI FLOW
Point ID: RHR103
Plant Spec Point Desc.: RHR LOOP B INJECT FLOW
Generic/Cond Desc.: LOW PRESSURE COOLANT INJECTION FLOW
Analog/Digital A
Engr Units/Dig States: GPM
Engr Units Conversion: N/A
Minimum Instr Range: 0
Maximum Instr Range: 10000
Zero Point Reference: N/A
Reference Point Notes: N/A
PROC or SENS: S

PROC or SENS:

Number of Sensors:

How Processed:

Sensor Location:

Alarm/Trip Set Points:

N/A

NI Detector Power Supply

N/A Cut-off Power Level:

NI Detector Power Supply N/A

Turn-on Power Level:

Instrument Failure Mode: HIGH & LOW SENSOR
Temperature Compensation N/A

For DP Transmitters: Level Reference Leg:

Unique System Desc.:

01/07/92

N/A

N/A

RHR LOOP B INJECT FLOW is the RHR flow to the B Recirc Loop and cross tie to A Loop. Each RHR pump is rated at about 4000 gpm depending on system head. Two pumps are located in each loop although flow can be cross tied between A and B loops.

Date:

Reactor Unit: Data Feeder:

Data Feeder:

NRC ERDS Parameter:

Point ID:

Plant Spec Point Desc.:

Generic/Cond Desc.:

Analog/Digital

Engr Units/Dig States:

Engr Units Conversion:

Minimum Instr Range:

Maximum Instr Range:

Zero Point Reference:

Reference Point Notes:

N/A

PROC or SENS:

CR SPRAY FL

CSP100

Core Spray Cooling System Flow

A

GPM

Engr Units Conversion:

N/A

Minimum Instr Range:

5000

N/A

N/A

PROC or SENS:

Cut-off Power Level:

NI Detector Power Supply N/A

Turn-on Power Level:

Instrument Failure Mode:

Temperature Compensation

For DP Transmitters:

Level Reference Leg:

Unique System Desc.:

01/07/92

MO1

PCS

Number of Sensors:

How Processed:
Sensor Location:
Alarm/Trip Set Points:
NI Detector Power Supply:

HIGH & LOW SENSOR N/A

N/A

The loop A Core Spray system consists of one electric driven pump designed to deliver 3020 gpm against a system head corresponding to a reactor pressure of 130psi above containment pressure. The flow element is located on the pump discharge line just a head of the reactor vessel injection and test return lines.

Date: Reactor Unit: Data Feeder: NRC ERDS Parameter: Point ID: Plant Spec Point Desc.: Generic/Cond Desc.: Analog/Digital Engr Units/Dig States: Engr Units Conversion: Minimum Instr Range: Maximum Instr Range: Zero Point Reference: Reference Point Notes: PROC or SENS: Number of Sensors: How Processed: Sensor Location: Alarm/Trip Set Points: NI Detector Power Supply Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation For DP Transmitters: Level Reference Leg: Unique System Desc.:

01/07/92 MO1 PCS CR SPRAY FL CSP101 CS LOOP 12 FLOW CORE SPRAY COOLING SYSTEM FLOW GPM N/A 0 5000 . (/A 1/A SIGNAL INPUT FROM FLOW TRANSMITTER ON PUMP DISCHARGE LINE N/A

N/A

HIGH & LOW SENSOR N/A

The loop B Core Spray system consists of one electric driven pump designed to de' ver 3020 gpm against a system head corresponding to a reactor pressure of 130psi above containment pressure. The flow element is located on the pump discharge line just a head of the reactor vessel injection and test return lines.

Date: Reactor Unit: Data Feeder: NRC ERDS Parameter: Point ID: Minimum Instr Range: Maximum Instr Range: Zero Point Reference: Reference Point Notes: PROC . SENS: Number of Sensors: How Processed: Sensor Lation: Alarm/Trip Jet Points: NI Detector Power Supply Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation For DP Transmitters: Level Reference Leg: Unique System Desc.:

01/07/92 MOI PCS DW FD SMP LV PCT138 Point ID:
Plant Spec Point Desc.:

Generic/Cond Desc.:

Analog/Digital

Engr Units/Dig States:
Engr Units Conversion:
Minimum Instr Range:

Maximum Instr Range:

DW EQUIP DRAIN SUMP VOL
DRYWELL FLOOR DRAIN SUMP LEVEL

A GAL
Engr Units Conversion:
N/A
Minimum Instr Range:
514.8 N/A N/A S SIGNAL INPUT FROM LEVEL TRANSMITTER DIRECTLY BELOW RX VESSFL IN DRYWELL DIRECTLY BELOW RX VESSEL IN DRYWELL N/A N/A N/A

HIGH & LOW SENSOR N/A

N/A This sump collects liquid effluent from valve stem leak-offs, Rx Recirc Pump and piping maintenance drains, vent cooler drains, reactor well bulkhead and beilows drains, reactor vessel flange leakoff and Drywell Equipment Drain Sump heat exchanger drain. Two 50 GPM pumps discharge the water to the Waste Collector Tank in the Reactor building. Sump is isolated by Group II Isolation or manually from control room. Sump overflows into Drywell Floor Drain Sump at 1090 Gallons.

Date:

Reactor Unit: Data Felder:

NRC ERDS Parameter:

Point ID:

Analog/Digital A
Engr Units/Dig States: GAL
Engr Units Conversion: N/A
Minimum Instr Range: 114.4
Maximum Instr Range: 514.8
Zero Point Reference: N/A
Reference Point Notes: N/A

PROC or SENS:

Number of Sensors:

How Processed:
Signal Input From Level Transmitter
DIRECTLY BELOW RX VESSEL IN DRYWELL
Alarm/Trip Set Points:
N/A
NI Detector Power Supply
N/A Cut-off Power Level: NI Detector Power Supply Turn-on Power Level:

Instrument Failure Mode:

Temperature Compensation For DP Transmitters: Level Reference Leg:

Unique System Desc.:

01/07/92

MO1

PCS DW FD SMP LV

PCT139

Plant Spec Point Desc.: DW FLOOK DRAIN SUMP VOL Generic/Cond Desc.: DRYWELL FLOOR DRAIN SUMP LEVEL

N/A

HIGH & LOW SENSOR

N/A

N/A

This sump collects liquid effluent from Drywell cooler drains, floor drains, control rod drive leakage and drains, closed cooling water piping drains, and piping and equipment maintenance vents. Two 50 GPM pumps discharge the water to the Floor Drain Collector Tank in the Reactor building. Sump is isolated by Group II Isolation or manually from control room. Sump overflows into Drywell Equipment Drain Sump at 1090 Gallons.

Date: Reactor Unit: Data Feeder:
NRC ERDS Parameter: EFF GAS RAD
PRM121 Data Feeder: Analog/Digital Engr Units/Dig States: uCI/S
Engr Units Conversion: N/A
Minimum Instr Bange: Minimum Instr Range: Maximum Instr Range: Maximum Instr Range: 10E12
Zero Point Reference: N/A
Reference Point Notes: N/A PROC or SENS: Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation For DP Transmitters: Level Reference Leg: Unique System Desc.:

01/37/92 MO1 PCS PRM121
Plant Spec Point Desc.: STACK EFF MONITOR CH A
Generic/Cond Desc.: RADIOACTIVITY OF RELEASED GASES A Number of Sensors:

How Processed:
Signal From Analog Output of Monitor
Four Isokinetic Probes in Off Gas Stack
Alarm/Trip Set Points:
HI=3200, HI-HI=90000
N/A
Cut-off Power Supply N/A

> HIGH & LOW SENSOR N/A

N/A STACK EFF MONITOR CH A is a wide range gas monitor consisting of isokinetic probe assembly, sample conditioning unit, sample detection unit, and Control Room panel. The detector assembly consists of low, mid, and high range detectors. Hi-Hi and/or INOP from both Channel A & B monitors will close valves to isolate off gas flow to the stack.

Date: Reactor Unit: Data Feeder: NRC ERDS Parameter: Point ID: Engr Units/Dig States: uCI/S Engr Units Conversion: N/A Minimum Instr Range: Maximum Instr Range: Zero Point Reference: Reference Point Notes: PROC or SENS: Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temporature Compensation For DP Transmitters: Level Reference Leg:

Unique System Desc .:

01/07/92 MO1 PCS EFF GAS RAD PRM122 Plant Spec Point Desc.: STACK EFF MONITOR CH B
Generic/Cond Desc.: RADIOACTIVITY OF RELEASED GASES
Analog/Digital A 1 10E12 N/A N/A Number of Sensors:

How Processed:
SIGNAL FROM ANALOG OUTPUT OF MONITOR
Sensor Location:
FOUR ISOKINETIC PROBES IN OFF GAS STACK
Alarm/Trip Set Points:
HI=3200, HI-HI=90000
NI Detector Power Supply
N/A N/A

HIGH & LOW SENSOR N/A

N/A STACK EFF MONITOR CH B is a wide range gas monitor consisting of isokinetic probe assembly, sample conditioning unit, sample detection unit, and Control Room panel. The detector assembly consists of low, mid, and high range detectors. Hi-Hi and/or INOP from both Channel A & B monitors will close valves to isolate off ges flow to the stack.

Date: Reactor Unit: Data Feeder: NRC ERDS Parameter: Minimum Instr Range: Maximum Instr Range: Zero Point Reference: Reference Point Notes: PROC or SENS: Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: HIGH & LOW SENSOR Temperature Compensation N/A For DP Transmitters. Level Reference Leg: Unique System Desc .:

01/07/92 MO1 PCS Point ID:
Plant Spec Point Desc.:
RBV EFFLUENT MONITOR CH A
Generic/Cond Desc.:
RADIOACTIVITY OF RELEASED GASES
Analog/Digital
Engr Units/Dig States:
Engr Units Conversion:
N/A
Minimum Instr Pages EFF GAS RAD 10E12 N/A N/A Number of Sensors:

How Processed:
Sensor Location:
Alarm/Trip Set Points:
N: Detector Power Supply

N/A

Signal From Analog Output of Monitor
ISOKINETIC PROBES IN EACH RX BLDG VENT
HI=400, HI-HI=4500
N/A S N/A

N/A Reactor Building Vent Effluent Monitor Channel A is a wide range gas monitor consisting of isokinetic probe assemblies, sample conditioning unit, sample detection unit, and Control Room panel. The detector assembly consists of low, mid, and high range detectors.

Date:

Reactor Unit:

Analog/Digital A
Engr Units/Dig States: uCI/S
Engr Units Conversion: N/A
Minimum Instr Range: 1
Maximum Instr Range: 10E12
Zero Point Reference: N/A
Reference Point Notes: N/A

PROC or SENS:

Cut-off Power Level: NI Detector Power Supply

Turn-on Power Level:

Instrument Failure Mode: Temperature Compensation

For DP Transmitters: Level Reference Leg: Unique System Desc.: 01/07/92

MO1

Data Feeder:

NRC ERDS Parameter:

Point ID:

Plant Spec Point Desc.:

Generic/Cond Desc.:

RADIOACTIVITY OF RELEASED GASES

S

Number of Sensors:

How Processed:
SIGNAL FROM ANALOG OUTPUT OF MCNITOR
Sensor Location:
SIGNAL FROM ANALOG OUTPUT OF MCNITOR
1SOKINETIC PROBES IN EACH RX BLDG VENT
Alaim/Trip Set Points:
HI=400, HI-HI=4500
NI Detector Power Supply
N/A

N/A

HIGH & LOW SENSOR

N/A

N/A

Reactor Building Vent Effluent Monitor Channel B is a wide range gas monitor consisting of isokinetic probe assemblies, sample conditioning unit, sample detection unit, and Control Room panel. The detector assembly consists of low, mid, and high range detectors.

Cut-off Power Level: MI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation For DP Transmitters:

Level Reference Leg:

Unique System Desc.:

Number of Sensors:

How Processed:
Sensor Location:
Sensor Location:
Alarm/Trip'Set Points:
NI Detector Power Supply
Cut-off Power Level

N/A

Signal Input From Monitor
SAMPLES SW PRIOR TO SW LEAVING RX BLDG
HI ALARM AS SET BY PLANT CHEMIST
N/A N/A

DOWNSCALE & UPSCALE N/A

N/A Gamma radiation emitted by radioactive materials contained in process liquid are detected by a scintillation detector housed in shielded sampler. Sidestream sample is used from the service water line prior to leaving the Reactor Building, After leaving Reactor Building, line discharges into circ water discharge pipe. Alarm setpoints vary with plant operation as determined by plant chemist.

Date: Reference Point Notes: FROC or SENS: Cut-off Power Level: NI Decector Power Supply Turn-on Power Level: Ten grature Compensation For DP Transmitters: Level Reference Leg: Unique System Desc.:

01/07/92 Reactor Unit: MO1
Data Feeder: PCS
NRC ERDS Parameter: EFF LIQ RAD
Point ID: PRM109
Plant Spec Point Desc.: RADWASTE EFFLUENT
Generic/Cond Desc.: RADIOACTIVITY OF RELEASED LIQUIDS Generic/Cond Desc.:

Analog/Digital

Engr Units/Dig States:

Engr Units Conversion:

Minimum Instr Range:

Maximum Instr Range:

Zero Point Reference:

N/A

Perference:

N/A

RADIOACTIVITY OF RELEASED LIQUIDS

A

CPS

LIQUIDS

A

LIQU N/S Number of Sensors:

How Processed:
Signal input from McNitor
Sensor Location:
SAMPLED PRIOR TO LEAVING RADWASTE BLDG
Alarm/Trip Set Points:
HI ALARM AS SET BY PLANT CHEMIST
NI Detector Power Supply
N/A N/A

Instrument Failure Mode: DOWNSCALE & UPSCALE, INOP N/A

N/A

Gamma radiation emitted by radioactive materials contained in process liquid are detected by a scintillation detector housed in shielded sampler. Liquid is sampled prior to leaving the Radwaste Building. After leaving Radwaste Building, line discharges into discharge canal. Although Monticello has permits, Monticello maintains a policy of zero liquid radwaste releases into the river. Alarm setpoints vary with plant operation as determined by plant chemist.

Reactor Unit: Data Feeder: NRC ERDS Parameter:

Date:

Analog/Digital

Engr Units/Dig States: CFM

Engr Units Conversion: uCi/Ml=((PRM110 in CPM)-400)*(3.5E-9)

Minimum Instr Range: 10

Maximum Instr Range: 10E6

Zero Point Reference: N/A

Reference Point Notes: N/A

PROC or SENS:

Number of Sensors:

How Processed:
Sensor Location:
Sensor Location:
Alarm/Trip Set Points:
NI Detector Power Supply

N/A

SIGNAL INPUT FROM MONITOR
SAMPLED PRIOR TO LEAVING TURBINE BLDG
HI ALARM AS SET BY PLANT CHEMIST
N/A Cut-off Power Level: NI Detector Power Supply N/A Turn-on Power Level: Instrument Failure Mode: Temperature Compensation

For DP Transmitters: Level Reference Leg: Unique System Desc.: 01/07/92

MO1

PCS EFF L1Q RAD

Point ID: PRM110
Plant Spec Point Desc.: TB NORMAL WASTE SUMP CH A
Generic/Cond Desc.: RADIOACTIVITY OF RELEASED LIQUIDS

DOWNSCALE & UPSCALE, INOP

N/A

N/A

Gamma radiation emitted by radioactive materials contained in process liquid are detected by a scintillation detectors in dry tube in sump. Sampled prior to leaving the Turbine Building. Alarm setpoints vary with plant operation as determined by plant chemist.

Date:

Date:

Reactor Unit:

Data Feeder:

NRC ERDS Parameter:

Point ID:

Plant Spec Point Desc.:

Generic/Cond Desc.:

Analog/Digital

Engr Units/Dig States:

Engr Units Conversion:

Minimum Instr Range:

Zero Point Reference:

N/A

Reference Point Notes:

N/A

M01

PCS

MM01

PCS

NADIOACTIVITY RAD

PRM11i

PRM11

Reference Point Notes: N/A

PROC or SENS:

Number of Sensors:

Number of Sensors:

How Processed:
Signal input from Monitor
Sensor Location:
Sampled Prior to Leaving turbine BLDG
Alarm/Trip Set Points:
HI ALARM AS SET BY PLANT CHEMIST
NI Detector Power Supply
N/A

Cut-off Power Level:

NI Detector Power Supply

Turn-on Power Level: Instrument Failure Mode:

Temperature Compensation

For DP Transmitters: Level Reference Leg:

Unique System Desc.:

01/07/92

N/A

DOWNSCALE & UPSCALE, INOP

N/A

N/A

Gamma radiation emitted by radioactive materials contained in process liquid are detected by a scintillation detectors in dry tube in sump. Sampled prior to leaving the Turbine Building. Alarm setpoints vary with plant operation as determined by plant chemist.

Date:

Reactor Unit: Data Feeder:

NRC ERDS Parameter:

Point ID:
Plant Spec Point Desc.:
DISCHARGE CANAL MONITOR A
Generic/Cond Desc.:
Analog/Digital
Engr Units/Dig States:
Engr Units Conversion:
Minimum Instr Range:
Zero Point Reference:
RADIOACTIVITY OF RELEASED LIQUIDS
A

UCI/Ml=((PRM112 in CPS)-2)*(1.4E-7)

Minimum Instr Range:
10E6
Zero Point Reference:
N/A
Reference Point Notes:

Reference Point Notes:

PROC or SENS:

How Processed:
Signal Input From Monitor
Sensor Location:
Sensor Location:
Signal Input From Monitor
Stort Downstream From Discharge Structure
Hi Alarm As SET BY PLANT CHEMIST
NI Detector Power Supply
Cut-off Power Level: Cut-off Power Level:

NI Detector Power Supply

Turn-on Power Level:

Instrument Failure Mode: DOWN Temperature Compensation N/A

For DP Transmitters:

Level Reference Leg: Unique System Desc.: 01/07/92

MO1

PCS

EFF LIQ RAD

N/A

N/A

DOWNSCALE & UPSCALE, INOP

N/A

Gamma radiation emitted by radioactive materials contained in process liquid are detected by a scintillation detectors. Sample is drawn from 4 standpipes in canal 550 feet downstream from the discharge structure. Alarm setpoints vary with plant operation as determined by

plant chemist.

Date: Reactor Unit: MO1
Data Feeder: PCS
NRC ERDS Parameter: EFF LIQ RAD
Point ID: PRM113 Reference Point Notes: N/A PROC or SENS: Number of Sensors: Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation For DP Transmitters: Level Reference Leg:

Unique System Desc.:

01/07/92 Point ID:
Plant Spec Point Desc.:

Generic/Cond Desc.:
Analog/Digital
Engr Units/Dig States:
Engr Units Conversion:
Minimum Instr Range:
Maximum Instr Range:
Zero Point Reference:
PRM113
DISCHARGE CANAL MONITOR B
RADIOACTIVITY OF RELEASED LIQUIDS
A
UCi/Ml=((PRM113 in CPS)-2)*(1.4E-7)
10E6
Zero Point Reference:
N/A
N/A Number of Sensors:

How Processed:
Signal Input From Monitor
Sensor Location:
Stort Downstream From Discharge Structure
Alarm/Tr Set Points:
HI ALARM AS SET BY PLANT CHEMIST
NI Detec Power Supply
N/A N/A

> DOWNSCALE & SCALE, INOP N/A

N/A Gamma radiation emitted by radioactive materials contained in process liquid are detected by a scintillation detectors. Sample is drawn from 4 standpipes in canal 550 feet downstream from the discharge structure. Alarm setpoints vary with plant operation as determined by plant chemist.

Date:

Reactor Unit: Data Feeder:

NRC ERDS Parameter:

Analog/Digital

Engr Units/Dig States: Engr Units Conversion:

Minimum Instr Range:

Maximum Instr Range: Zero Point Reference:

Reference Point Notes: PROC or SENS:

Number of Sensors:

How Processed: Sensor Location:

Sensor Location: SAMPLE DRAWN FROM OFF GAS LINE
Alarm/Trip Set Points: TRIP ON BOTH MONITORS UP, DOWN OR INOP
NI Detector Power Supply N/A

Cut-off Power Level: NI Detector Power Supply

Turn-on Power Level:

Instrument Failure Mode: Temperature Compensation

For DP Transmitters: Level Reference Leg:

Unique System Desc.:

01/07/92

MO1

PCS

CND A/E RAD

Point ID: PRM118

Plant Spec Point Desc: OFF GAS CH 1

Generic/Cond Desc: CONDENSER AIR EJECTOR RADIOACTIVITY

Analog/Digital A

MR/HR N/A

10E6

N/A

N/A

S

1 SIGNAL OUTPUT FROM MONITOR

N/A

LOW

N/A

N/A

OFF GAS CH 1 radiation monitor is positioned adjacent to a vertical sample chamber. A continuous sample is drawn. from the off gas line downstream from the Steam Jet Air Fjectors and ahead of the Recombiner trains. The sample is monitored after a time delay of approximately 2 minutes to permit Nitrogen-16 and Oxygen-19 to decay. Alarm setpoints vary with plant operation as determined by plant chemist.

Date:

Data Feeder:

NRC ERDS Parameter:

Point ID:

PRM119

Plant Spec Point Desc.:

Generic/Cond Desc..

Analog/Digital

Engr Units/Dig States:

Engr Units Conversion:

MO1

PRM119

OFF GAS CH 2

CONDENSER AIR EJECTOR RADIOACTIVITY

ARE ENGR Units Conversion:

MR/HR

Engr Units Conversion:

MA

Minimum Instr Range:

Maximum Instr Range:

10E6

Zero Point Reference:

N/A

Reference Point Notes:

N/A

PROC or SENS:

S

Cut-off Power Level: NI Detector Power Supply N/A

Turn-on Power Level:

Instrument Failure Mode: Temperature Compensation N/A

For DP Transmitters:

Level Reference Leg:

Unique System Desc.:

01/07/92

PROC or SENS:

Number of Sensors:

How Processed:

Signal Output from Monitor

Sensor Location:

Alarm/Trip Set Points:

TRIP ON BOTH MONITORS UP, DOWN OR INOP

NI Detector Power Supply

N/A

LOW

N/A

OFF GAS CH 2 radiation monitor is positioned adjacent to a vertical sample chamber. A continuous sample is drawn from the off gas line downstream from the Steam Jet Air Ejectors and ahead of the Recombiner trains. The sample is monitored after a time delay of approximately 2 minutes to permit Nitrogen-16 and Oxygen-19 to decay. Alarm setpoints vary with plant operation as determined by plant chemist.

Reactor Unit: Data Feeder: NRC ERDS Parameter: Point ID: Plant Spec Point Desc.: DRYWELL RADIATION CH A Generic/Cond Desc.: RADIATION LEVEL IN THE DRYWELL Generic/Cond Desc.: RADIA
Analog/Digital A
Engr Units/Dig States: R/HR
Engr Units Conversion: N/A
Instr Range: 1 Minimum Instr Range: Maximum Instr Range: Zero Point Reference:

Date:

How Processed:

Signal Input From Radiation Monitor
Sensor Location:
Alarm/Trip Set Points:
NI Detestor Power Supply
Cut-off Power Level:
NI Det Reference Point Notes: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation For DP Transmitters:

Level Reference Leg:

Unique System Desc.:

01/07/92 MO1 PCS DW RAD PCT109

10E8 N/A N/A

N/A

HIGH SENSOR, INOP

N/A

Purpose is to provide estimate of core damage by measuring drywell gamma radiation fields caused by fission product leakage from the core. Each sensor is an ionization chamber with an internal U-234 source which gives 1R/HR reading for operation verification. Elevation 944' is just below bottom of reactor vessel (949').

Date:

Reactor Unit: Data Feeder:

Data Feeder:

NRC ERDS Parameter:

Point ID:
Plant Spec Point Desc.:

Generic/Cond Desc.:

Analog/Digital

Engr Units/Dig States:

Engr Units Conversion:

Minimum Instr Range:

Zero Point Reference:

RADIATION LEVEL IN THE DRYWELL

A/A

N/A

Minimum Instr Range:

1

Maximum Instr Range:

Zero Point Reference:

N/A

Reference Point Notes:

N/A

PROC or SENS:

PROC or SENS:

Number of Sensors:

How Processed:
Signal Input From Radiation Monitor
Sensor Location:
DRYWELL 0 DEGREE AZIMUTH AT 944'
Alarm/Trip Set Points:
HI=50, HI-HI=100
NI Detector Power Supply
N/A Cut-off Power Level:

NI Detector Power Supply Turn-on Power Level:

Instrument Failure Mode: Temperature Compensation N/A

For DP Transmitters: Level Reference Leg: Unique System Desc.: 01/07/92

MO1 PCS

N/A

HIGH SENSOR, INOP

N/A

Purpose is to provide estimate of core damage by measuring drywell gamma radiation fields caused by fission product leakage from the core. Each sensor is an ionization chamber with an internal U-234 source which gives 1R/HR reading for operation verification. Elevation 944' is just below bottom of reactor vessel (949 .

Date: Data Feeder: Reactor Unit: NRC ERDS Parameter: MN STEAM RAD

Point ID:

Analog/Digital

Engr Units/Dig States: Engr Units Conversion: Minimum Instr Range: Maximum Instr Range:

Zero Point Reference: Reference Point Notes:

PROC or SENS: Number of Sensors: How Processed: Sensor Location:

Alarm/Trip Set Points: NI Detector Power Supply Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode:

"emperature Compensation For DP Transmitters: Level Reference Leg: Unique System Desc .:

01/07/92 MO1 -

PCS

Plant Spec Point Desc.: (not available)
Generic/Cond Desc.: RADIATION LEVEL OF THE MAIN STEAM LINE

Not available to Process Computer System.

Date: Reactor Unit: Data Feeder: NRC ERDS Parameter: Point ID: Engr Units/Dig States: PSIG
Engr Units Conversion: N/A
Minimum Instr Range: -5
Maximum Instr Range: 250
Zero Point Reference: N/A
Reference Point Notes: PROC or SENS: Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation For DP Transmitters: Level Reference Leg: Unique System Desc.:

01/07/92 MO1 PCS DW PRESS D23C0010 Plant Spec Point Desc.: VALIDATED DRYWELL PRESSURE
Generic/Cond Desc.: DRYWELL PRESSURE
Analog/Digital A Number of Sensors:

How Processed:
Sensor Location:
Alarm/Trip Set Points
NI Detector Power Supply

WEIGHTED AVERAGE OF CONSIS.INT DW PRESS
SENSING LINES FROM DRYWELL
ALARMS LOW=0.1, HIGH=1.5
N/A

N/A

HIGH & LOW SENSOR N/A

N/A This point consists of either a weighted average of all consistent drywell pressure or an average of in-range drywell pressures if there are less than the required number of consistent singals. Four drywell pressure signals consist of one narrow range (-2 to 3), one wide range (0 to 80) and two accident (-5 to 250) ranges. Weighted averages produces average that is weighted based instrument accuracy. Drywell internal design pressure is 56 PSIG at 281 Degrees F. At 2 PSIG, RPS initiates Reactor SCRAM and Primary Containment Isolation initiates Group 2 & 3.

Date: Reactor Unit: Data Feeder: NRC ERDS Parameter: Point ID: Analog/Digital
Engr Units/Dig States: DEGF
N/A Minimum Instr Range: Maximum Instr Range: Zero Point Reference: Reference Point Notes: N/A PROC or SENS: Number of Sensors: How Processed: Sensor Location: Alarm/Trip'Set Points: NI Detector Power Supply Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation For DP Transmitters: Level Reference Leg: Unique System Desc.:

01/07/92 MO1 PCS DW TEMP D23C0310 Plant Spec Point Desc.: VALIDATED DRYWELL TEMPERATURE Generic/Cond Desc.: DRYWELL TEMPERATURE 32 400 N/A p 16
AVERAGE OF CONSISTENT DW TEMPERAURES
16 SENSORS AT 8 DRYWELL LOCATIONS
HI=150 DEGF N/A

HIGH & LOW SENSOR N/A

N/A This point consists of either a weighted average bulk temperature of consistent regional temperatures or an unvalidated, non-weighted average of all in-range drywell temperatures. Regional weighting factors compensate for differences in drywell volume at the various elevations. Each location utilizes two sensors and are located in Drywell at: Elev 932' (East & West), Elev 951' (North & South), Elev 970' (East & West), and Elev 994' (North & South).

Date:

Reactor Unit: Data Feeder:

NRC FRDS Parameter:

Pois ID D23C0410

Plant Spec Point Desc.: VALIDATED TORUS TEMPERATURE
Generic/Cond Desc.: SUPPRESSION POOL TEMPERATURE
Analog/Digital A
Engr Units/Dig States: DEGF
Engr Units Conversion: N/A
Minimum Instr Range: 30
Maximum Instr Range: 230
Zero Point Reference: N/A
Reference Point Notes: N/A
PROC or SENS: P

PROC or SENS:

Cut-off P wer Level:

NI Detector Power Supply

Turn-on Power Level:

For DP Transmitters: Level Reference Leg:

Unique System Desc.:

01/07/92

MO1

PCS SP TEMP

PROC or SENS:

Number of Sensors:

How Processed:
Sensor Location:
AVERAGE OF 2 SPOTMOS (8 SENSORS EACH)
2 SENSORS IN EACH OF 8 TORUS SRV BAYS
Alarm/Trip Set Points:
HIGH=90
NI Detector Power Jupply
N/A

N/A

Instrument Failure Mode: HIGH & LOW SENSOR, SPOTMOS INOP Temperature Compensation N/A

N/A

VALIDATED TORUS TEMPERATURE is the

average of the inputs from two

Suppression Pool Temperature Monitoring Systems (SPOTMOS). Each system generates an average of eight sensors. Each sensor is located in one of the eight bays that

Safety Relief Valves discharge into.

Date: Reactor Unit: Data Feeder: NRC ERDS Parameter: Generic/Cond Decided Analog/Digital Analog/Digital INCHES Engr Units/Dig States: INCHES Engr Units Conversion: N/A -96 180 NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation N/A For DF Transmitters: Level Reference Leg: Unique System Desc.:

01/07/92 MO1 PCS SP LEVEL Point ID: G43C0015
Plant Spec Point Desc.: VALIDATED TORUS WATER LEVEL
Generic/Cond Desc.: SUPPRESSION POOL WATER LEVEL
Analog/Digital A Maximum Instr Range: 180
Zero Point Reference: N/A
Reference Point Notes: 0*=ELEVATION 910'= 530,000 GALLONS
PROC or SENS: P How Processed:
Sensor Location:
Alarm/Trip Set Points:
NI Detector Power Supply
Cut-off Power Level:

WEIGHTED AVERAGE OF CONSISTENT LEVELS
LEVEL TAPS OFF TORUS SHELL
HIGH=2, LO=-2
N/A N/A

> This point consists of either a weighted average of all consistent torus water levels or an average of in-range torus water levels if there are less than the required number of consistent signals. Four torus water level signals consist of two narrow range (-15 to 15) and two wide

HIGH & LOW SENSOR

instrume .: accuracy. HPCI suction transfer occurs at 2". Tech Specs level greater than -4° and less than 2.9°.

range (-96 to 180). Weighted averages produce an average that is based on

Date: Reactor Unit: Data Feeder: NRC ERDS Parameter: H2 CONC Engr Units/Dig States: %
Engr Units Conversion: N/A
Minimum Instr Range: 0
Maximum Instr Range: 20
Zero Point Reference: N/A
Reference Point Notes: Reference Point Notes: PROC or SENS: Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation N/A For DP Transmitters: Level Reference Leg: Unique System Desc.:

01/07/92 MO1 PCS Point ID: PCT116
Plant Spec Point Desc.: PCTMT H2 ANALYZER A
Generic/Cond Desc.: DRYWELL OR TORUS HYDROGEN CONCENTRATION
Analog/Digital A Number of Sensors:

How Processed:
Sensor Location:
Alarm/Trip Set Points:
N/A
NI Detector Power Supply
N/A
Cutroff Power Level:

1
SIGNAL OUTPUT FROM H2 ANALYZER
SAMPLE LINES UPPER DW, TORUS, CGCS IN & OUT
N/A
N/A
N/A N/A

HIGH & LOW SENSON, SYSTEM OFF

N/A Analyzers are normally shutdown and values will usually read less than 0.75%. System is capable of analyzing samples from Drywell (elsv 994'), Torus and Combustible Gas Control System inlet and outlet. Sample line and sample return valves close on Group 2 Isolation.

Date: Reactor Unit: Data Feeder: NRC ERDS Parameter: Point ID: Point ID:
P'ant Spec Point Desc.: PCTMT H2 ANALYZER B
Generic/Cond Desc.: DRYWELL OR TORUS HYI Analog/Digital Engr Units/Dig States: Engr Units Conversion: Minimum Instr Range: Maximum Instr Range: Zero Point Reference: Reference Point Notes: PROC or SENS: Number of Sensors: How Processed: Sensor Location: Alarm/Trip Set Points: NI Detector Power Supply Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation For DP Transmitters: Level Reference Leg: Unique System Desc.:

01/07/92 MO1 PCS H2 CONC PCT117 DRYWELL OR TORUS HYDROGEN CONCENTRATION A N/A 0 20 N/A N/A S SIGNAL OUTPUT FROM H2 ANALYZER
SAMPLE LINES UPPER DW, TORUS, CGCS IN & OUT
N/A N/A N/A N/A

HIGH & LOW SENSOR, SYSTEM OFF N/A

N/A Analyzers are normally shutdown and values will usually read less than 0.75%. System is capable of analyzing samples from Drywell (elev 994'), Torus and Combustible Gas Control System inlet and outlet. Sample line and sample return valves close on Group 2 Isolation.

Date: Reactor Unit: Data Feeder:

Data Feeder:

NRC ERDS Parameter:

Point ID:
Plant Spec Point Desc.:
Generic/Cond Desc.:
Analog/Digital
Engr Units/Dig States:
Engr Units Conversion:
Minimum Instr Range:
Zero Point Reference:
Reference Point Notes:
N/A
PROC or SENS:

H2 CONC
PCT118
PCTMT 02 ANALYZER A
DRYWELL OR TORUS HYDROGEN CONCENTRATION
A
N/A
N/A
N/A
N/A
N/A
N/A
N/A
S
S

PROC or SENS: Number of Sensors:

How Processed:
Sensor Location:
Alarm/Trip Set Points:
N/A
NI Detector Power Supply
N/A

N/A
N/A

Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation N/A

For DP Transmitters: Level Reference Leg: Unique System Desc .:

01/07/92 MO1 PCS

S

N/A

HIGH & LOW SENSOR, SYSTEM OFF

Analyzers are normally shutdown and values will usually read less than 0.75%. System is capable of analyzing samples from Drywell (elev 994'), Torus and Combustible Gas Control System inlet and outlet. Sample line and sample return valves close on Group 2 Isolation. Normal

operation concentrations are 2.4%.

Date: Reactor Unit: Data Feeder: Minimum Instr Range: 0
Maximum Instr Range: 25
Zero Point Reference: N/A
Reference Point Notes: N/A Minimum Instr Range: PROC or SENS: Number of Sensors: How Processed: Sensor Location: Alarm/Trip Set Points: N/A NI Detector Power Supply Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation For DP Transmitters: Level Reference Leg: Unique System Desc.:

01/07/92 MO1 PCS Data Feeder:

NRC ERDS Parameter:

Point ID:

Plant Spec Point Desc.:

Generic/Cond Desc.:

Analog/Digital

Engr Units/Dig States:

Engr Units Conversion:

N/A

Minimum Instr Pange: S 1 SIGNAL OUTPUT FROM 02 ANALYZER SAMPLE LINES UPPER DW, TORUS, CGCS IN & OUT N/A N/A

HIGH & LOW SENSOR, SYSTEM OFF N/A

Analyzers are normally shutdown and values will usually read less than 0.75%. System is capable of analyzing samples from Drywell (elev 994'), Torus and Combustible Gas Control System inlet and outlet. Sample line and sample return valves close on Group 2 Isolation. Normal operation concentrations are 2.4%.

Date: Reactor Unit: Data Feeder: NRC ERDS Parameter: Point ID: Minimum Instr Range: Maximum Instr Range: Zero Point Reference: Reference Point Notes: PROC or SENS: Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation For DP Transmitters: Level Reference Leg: Unique System Desc.:

01/07/92 MO1 PCS CST LEVEL Point ID: CST100
Plant Spec Point Desc.: CST TANK LEVEL A
Generic/Cond Desc.: CONDENSATE STORAGE TANK LEVEL
Analog/Digital A
Engr Units/Dig States: FEET
Engr Units Conversion: N/A CST100 5 25 N/A N/A Number of Sensors:

How Processed:
SIGNAL FROM LEVEL TRANSMITTER
LEVEL TX ON WATER CCLUMUN IN RX BLDG
Alarm/Trip Set Points:
HI=24'(226,100gal) LO=11.5'(108,400gal)
NI Detector Power Supply
Cut-off Power Level: N/A

> LOW N/A

Condensate Storage Tank (CST) Level A is the water level in the A CST. Two CSTs exist with a tank capacity of 230,000 gallons each. Makeup condensate water is provided through 3 electric pumps from the CST tanks to various plant systems. Each tank has suction line for Control Rod Drive, HPCI, Core Spray, RHR, and RCIC systems. At 7'(65,800gal) receive CST Low-Low Level alarm and condensate pumps trip. At 2'(18,800gal) HPCI transfers to Torus suction. Core Spray and RHR are normally lined up to the CSTs.

Reactor Unit: MO1
Data Feeder: PCS
NRC ERDS Parameter: CST LEVEL
Point ID: CST101

Date:

PROC or SENS: Number of Sensors:

How Processed:
Signal From Level Transmitter
Sensor Location:
Level Tx On Water Column In Rx BLDG
Alarm/Trip Set Points:
HI=24'(226,100gal) LO=11.5'(108,400gal)
NI Detector Power Supply
N/A Cut-cff Power Level: NI Detector Power Supply N/A

Instrument Failure Mode: LOW Temperature Compensation N/A For DP Transmitters: Level Reference Leg:

Turn-on Power Level:

Unique System Desc.:

01/07/92

Condensate Storage Tank (CST) Level B is the water level in the B CST. Two CSTs exist with a tank capacity of 230,000 gallons each. Makeup condensate water is provided through 3 electric pumps from the CST tanks to various plant systems. Each tank has suction line for Control Rod Drive, HPCI, Core Spray, RHR, and RCIC systems. At 7'(65,800gal) receive CST Low-Low Level alarm and condensate pumps trip. At 2'(18,800gal) HPCI transfers to Torus suction.

Date: Reactor Unit: Data Feeder: NRC ERDS Farameter: Point ID: Analog/Digital Engr Units/Dig States:
Engr Units Conversion:
N/A
0 Minimum Instr Range: Maximum Instr Range: Zero Point Reference: Reference Point Notes: PROC or SENS: NI Detector Power Supply Turn-on Power Le. 91: Instrument Failure Mode: HIGH & LOW SENSOR Temperature Compensation N/A For DP Transmitters: Level Reference Leg: Unique System Desc.:

01/07/92 MO1 PCS WIND PEED LET102 Plant Spec Point Desc.: PRIMARY MPT TOWER 43M AVG WIND SPEED A Generic/Cond Desc.: WIND SPEED 'T THE REACTOR SITE MPH 100.00 N/A N/A Sensor Location:

Alarm/Trip Set Points:

N/A

NI Detector Priver Supply

Cut-off Power Level: N/A

N/A Data is collected every five seconds, averaged every 15 minutes, and stored in data files as 15-minute average.

Date:

Reactor Unit: Data Feeder:

NRC ERDS Parameter:

Point ID:

Analog/Digital
Engr Units/Dig States: MPH
Engr Units Conversion: N/A

Mir.imum Instr Range: Maximum Instr Range:

Zero Point Reference: N/A
Reference Point Notes: N/A Reference Point Notes:

PROC or SENS:

Cut-off Power Level:

NI Detector Power Supply N/A

Turn-on Power Level:

Instrument Failure Mode: HIGH & LOW SENSOR Temperature Compensation N/A

For DP Transmitters: Level Reference Leg:

Unique System Desc.:

01/07/92

MO1

PCS WIND SPEED

MET103

Plant Spec Point Desc.: PRIMARY MET TOWER 43M AVG WIND SPEED B Generic/Cond Desc.: WIND SPEED AT THE REACTOR SITE Analog/Digital A

0

100.00

N/A

Data is collected every five seconds, averaged every 15 minutes, and stored in

Date: Reactor Unit: Data Feeder:

Data Feeder:

NRC ERDS Paramo er:

Point ID:

Plant Spec Point Dosc.:

Analog/Digital

Engr Units/Dig States:

Engr Units Conversion:

Minimum Instr Range:

Maximum Instr Range:

Reference Point Notes:

PCS

WIND SPEED

104

Ph. MRY MET TOWER 100M AVG VIND SPEED A

WIND SPEED AT THE REACTOR SITE

A

MPH

Engr Units/Dig States:

MPH

100.00

N/A

N/A

Reference Point Notes:

N/A

PROC or SENS:

Cut-off Power Level:

NI Detector Power _upply Turn-on Power Level:

Instrument Fai.ure Mode: HIGH & LOW SENSOR

Temperature Compensation N/A For DP Transmitters: Level Reference Leg:

01/07/92

MO1 PCS

PROC or SENS:

Number of Sensors:

How Processed:
Sensor Location:
Alarm/Trip Set Points:
N/A
NI Detector Power Supply

N/A

N/A

N/A

M/A

N/A

Level Reference Leg: N/A
Unique System Desc.: Data is collected every five seconds. averaged every 15 minutes, and scored in

Date: Reactor Unit: Data Feeder: NRC ERDS Palameter: Point II Generic/Cond Desc.: Analog/Dicital Engr Units/Dig States: Engr Units Conversion: Minimum Instr Range: Maximum Instr Ranga: Zero Point Reference: Reference Point Notes: PROC or SENS: Number of Sensors: How Processed: Sensor Location: Alarm/Trip Set Points: NI Detector Power Supply Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: HIGH & LOW SENSOR Temperature Compensation N/A For DP Transmitters:

Level Reference Leg:

Unique System Desc.:

01/07/92 MO1 PCS WIND SPEED MET105 Plant Spec Point Desc.: PRIMARY MET TOWER 100M AVG WIND SPEED B Generic/Cond Desc.: WIND SPEED AT THE REACTOR SITE MPH N/A 100.00 N/A N/A 15 MINUTE AVERAGE OF 5 SECOND VALUES PRIMARY MET TOWER AT 100 METER HEIGHT N/A N/A N/A

N/A Data is collected every five seconds, averaged every 15 minutes, and stored in data files as 15-minute average.

Date:

Reactor Unit:

Reactor Unit:
Data Feeder:
NRC ERDS Parameter:
Point ID:
Plant Spec Point Desc.:
Generic/Cond Desc.:
Analog/Digital
Engr Units/Dig States:
Engr Units Conversion:
Minimum Instr Range:
Naximum Instr Range:
Naximum Instr Range:
Reference Point Notes:
PRIMARY MET TOWER 43M AVG WIND DIRECT A
WIND DIRECTION AT THE REACTOR SITE
A
DEGFR

N/A
Minimum Instr Range:
N/A
Reference Point Notes:
N/A
Reference Point Notes:
N/A
PROC or SENS:
P

PROC or SENS:

PNumber of Sensors:

How Processed:

Sensor Location:

Alarm/Triginet Points:

N/A

NI Detector Power Supply

N/A

N/A Cut-off Power Level:

NI Detector Power Supply N/A

Turn-on Power Level:

Instrument Failure Mode: HIGH & LOW SENSOR Temperature Compensation N/A

For DP Transmitters: Level Reference Leg:

Unique System Desc.:

01/07/92

MO1

N/A
Data is collected every five seconds,
averaged every 15 minutes, and stored in

Date:

Reactor Unit: Data Feeder:

NRC ERDS Parameter:

Point ID:

Point ID:

MET107

Plant Spec Point Desc.:

Generic; Ond Desc.:

Analog/Digital

Eng: Units/Dig States:

Engr Units Conversion:

Minimum Instr Range:

Minimum Instr Range:

Minimum Instr Range:

Maximum Instr Range:

S40.00

Zero Point Reference:

N/A

Reference Point Notes:

MIND DIR

MET107

PRIMARY NET TOWER 43M AVG WIND DIRECT B

WIND DIRECTION AT THE REACTOR SITE

A

DEGFR

N/A

Reference Point Notes:

PROC or SENS:

Cut-off Power Level:

NI Detector Power Supply N/A

Turn-on Power Level:

Instrument Failure Mode: HIGH & LOW SENSOR Temperature Compensation N/A

For DP Transmitters: Level Reference Leg:

Unique System Desc.:

01/07/92

MO1

PCS WIND DIR

N/A

Number of Sensors:

How Processed:
Sensor Location:
Alarm/Trip Set Points:
N/A
NI Detector Power Supply
Cut-off Power Level:

N/A

Data is collected every five seconds, averaged every 15 minutes, and stored in

Date: Reactor Unit: Data Feeder: NRC ERDS Parameter: Analog/Digital A Engr Units/Dig States: DEGFR Engr Units Conversion: Minimum Instr Range: Maximum Instr Range: Zero Point Reference: Reference Point Notes: PROC or SENS: Number of Sensors: How Processed: 15 M
Sensor Location: PRIM
Alarm/Trip Set Points: N/A "I Detector Power Supply Cut-off Power Level: NI Detector Power Supply Turn-on Power Level: Instrument Failure Mode: Temperature Compensation For DP Transmitters: Level Reference Leg: Unique System Desc.:

01/07/92 MO1 PCS WIND DIR Point ID: MET108

Plant Spec Point Desc.: PRIMARY MET TOWER 100M AVG WIND DIRECT A
Generic/Cond Desc.: WIND DIRECTION AT THE REACTOR SITE
Analog/Digital N/A 540.00 N/A 15 MINUTE AVERAGE OF 5 SECOND VALUES PRIMAP" MET TOWER AT 100 METER HEIGHT N/A N/A

HIGH & LOW SENSOR N/A

N/A Data is collected every five seconds, averaged every 15 minutes, and stored in data files as 15-minute average.

Date:

Analog/Digital A
Engr Units/Dig States: DEGFR
Engr Units Conversion: N/A
Minimum Instr Range: 0
Maximum Instr Range: 540.00
Zero Point Reference: N/A
Reference Point Notes: N/A

Cut-off Power Level: NI Detector Power Supply N/A

Turn-on Power Level:

Instrument Failure Mode: HIGH & LOW SENSOR
Temperature Compensation N/A

For DP Transmitters: Level Reference Leg:

Unique System Desc.:

01/07/92

Reactor Unit:

Data Feeder:

NRC ERDS Parameter:

Point ID:

Plant Spec Point Desc.:

Generic/Cond Desc.:

Analog/Digital

Procedure:

O1/07/92

MO1

PCS

WIND DIR

MET109

PRIMARY MET TOWER 100M AVG WIND DIRECT B

WIND DIRECTION AT THE REACTOR SITE

A

PROC or SENS:

Number of Sensors:

How Processed:
Sensor Location:
Alarm/Trip Set Points:
N/A
NI Detector Power Supply

PRIMARY MET TOWER AT 100 METER HEIGHT
N/A
N/A

N/A

Data is collected every five seconds, averaged every 15 minutes, and stored in

Date:

Reactor Unit: Data Feeder:

Data Feeder:

NRC ERDS Parameter:

PointID:

Flant Spec Pci... Desc.:

Analog/Digital:

Engr Units/Dig States:

Engr Units Conversion:

Minimum Instr Range:

Zero Point Reference:

Reference Point Notes:

PCS

STAB CLASS

MET110

PRIMARY MET TOWER 43M AVG DELTA TEMP A

AIR STABILITY AT THE REACTOR SITE

A

DEGF

N/A

PROC or SENS:

PCS

STAB CLASS

MET110

PRIMARY MET TOWER 43M AVG DELTA TEMP A

AIR STABILITY AT THE REACTOR SITE

A

PROC DEGF

N/A

PROC

PROC or SENS:

Number of Sensors:

How Processed:
Sensor Location:
Alarm/Trip Set Points:
N/A
NI Detector Power Supply

PROC

AVERAGED DIFFERENTIAL
PRIMARY MET AT 10 & 43 METER HEIGHT
N/A
N/A

Cut-off Power Level:

NI Detector Power Suppl

Turn-on Power Level:

Instrument Failure Mode: Temperature Compensation N/A

For DP Transmitters: Level Reference Leg:

Unique System Desc.:

01/07/92

MO1

PCS

PROC

N/A

HIGH & LOW SENSOR

N/A

Data is collected every five seconds, averaged every 15 minutes, and stored in data files as 15-minute average. This value represents the difference in

temperature in degF/100ft

Date:

Reactor Unit:

Data Feeder: PCS
NRC ERDS Parameter: STAB CLASS

Zero Point Reference:

Reference Point Notes:

PROC or SENS:
Number of Sensors:
How Processed:
Sensor Location:
Alarm/Trip'Set Points:
N/A
NI Detector Power Supply
Cut-off Power Level:
N/A
N/A

Cut-off Power Level:

NI Detector Power Supply N/A

Turn-on Power Level:

Instrument Failure Mode: HIGH & LOW SENSOR Temperature Compensation N/A

For DP Transmitters:

Level Reference Leg:

Unique System Desc.:

01/07/92

MO1

PointID: MET111

Plant Spec Point Desc.: PRIMARY MET TOWER 43M AVG DELTA TEMP B
Generic/Cond Desc.: AIR STABILITY AT THE REACTOR SITE
Analog/Digital: A
Engr Units/Dig States: DEGF
Engr Units Conversion: N/A
Minimum Instr Range: 9.0
Maximum Instr Range: 9.0

N/A

N/A

Data is collected every five seconds, averaged every 15 minutes, and stored in data files as 15-minute average. This

value represents the difference in

temperature in degF/100ft.

Date:

Reactor Unit: Data Feeder:

NRC ERDS Palameter:

Point ID:

Generic/Cond Desc.:

Analog/Digital:

Engr Units/Dig States: Engr Units Conversion: Minimum Instr Range: Maximum Instr Range:

Zero Point Reference: Reference Point Notes:

PROC or SENS:

Number of Sensors:

How Processed: Sensor Location:

Alarm/Trip Set Points: NI Detector Power Supply

Cut-oif Power Lev 1:

NI Detector Power Supply

Turn-on Power Level: Temperature Compensation N/A
For DP Transmitt

For DP Transmitters:

Level Reference Leg: Unique System Desc.:

01/07/92

MO1

PCS STAB CLASS

MET112

Plant Spec Point Desc.: PRIMARY MET TOWER 100M AVG DELTA TEMP A Generic/Cond Desc.: AIR STABILITY AT THE REACTOR SITE

DEGF

N/A -9.0

9.0

N/A

PROC

AVERAGED DIFFERENTIAL

PRIMARY MET AT 10 & 100 METER HEIGHT

N/A

N/A

N/A

N/A

Data is collected every five seconds, averaged every 15 minutes, and stored in data files as 15-minute average. This value represents the difference in

temperature in degF/100ft.

Date:

Reactor Unit: MO1

Data Feeder: PCS

NRC ERDS Parameter: STAB CLASS

PointID:

Cut-off Power Level:

NI Detector Power Supply 1/A

Turn-on Power Level:

Instrument Failure Mode: HIGH & LOW SENSOR Temperature Compensation N/A

For DP Transmitters:

Level Reference Leg:

Unique System Desc.:

01/07/92

NRC ERDS Parameter:

PointID:

Plant Spec Point Dasc.:

Generic/Cond Desc.:

Alk STABILITY AT THE REACTOR SITE

Analog/Digital:

Engr Units/Dig States:

Engr Units Conversion:

MA
Minimum Lastr Range:

Zero Point Reference:

Reference Point Notes:

PROC

N/A

Reference Point Notes:

PROC

Number of Sensors:

AVERAGED DIFFERENTIAL

Sensor Location:

Alarm/Trip Set Points:

N/A

Ni Detector Power Supply

Cut-off Power Level:

N/A Data is collected every five seconds, averaged every 15 minutes, and stored in data files as 15-minute average. This

value represents the difference in

temperature in degF/100ft.

I. Contacts

Note: Please provide name, title, mailing address and phone number.

A. Survey Coordinator (i.e. contact for later clarification of questionnaire answers):

Russell E. Van Dell Superintendent, Computer Services Northern States Power Company Monticello Nuclea: Generating Plant 2° W. Highway 75 Monticello, MN 55362 (612) 295-1326

B. Computer Hardware Specialist(s):

Joe Jirsa
Engineer Associate III
Northern States Power Company
Monticello Nuclear Generating Plant
2807 W. Highway 75
Monticello, MN 55362
(612) 295-1388

C. Systems Software Specialist(s):

Joe Sofge Sr. Comp. Engr. Northern States Power Company Mouticello Nuclear Generating Plant 2807 W. Highway 75 Monticello, MN 55362 (612) 295-1289

D. Application-level Software Specialist(s):

Joe Sofge Sr. Comp. Engr. Northern States Power Company Monticello Nuclear Generating Plant 2807 W. Highway 75 Monticello, MN 55362 (612) 295-1289

E. Telephone Systems Specialist(s):

David Seestrom
Instrument Engineer
Northern States Power Company
Monticello Nuclear Generating Plant
2807 W. Highway 75
Monticello, MN' 55362
(612) 295-1376

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III. Felection of Data Feeders

A. How many data feeders are there (six maximum)?

One - Process Computer System

- B. Identify the selected data feeders and provide the following for each:
 - (1) a short description of the categories of data points it will provide (e.g., met. rad. or plant data points, by unit) and
 - (2) the rationale for selecting it if another system can also provide its categories of data points.
 - (1) It is planned to provide both plant data points and meteorological information through the single feeder.
 - (2) No other system is capable of providing requested information.
- C. Which data feeder is the site time determining feeder? This should be the feeder which is providing the majority of the data points.

IV. Data Feeder Information

Note: A new Section IV must be filled out for each feeder system selected.

General Questions

- 1. Identification of Data Feeder
 - a. What is the name in local parlance given to this data feeder (e.g., Emergency Response Information System)? Please give both the acronym and the words forming it.

PCS - Process Computer System

b. Is this the site time determining feeder?

Yes

. . . .

c. How often will this feeder transmit an update set to the ERDS (in seconds)?

60 Seconds

- 2. Hardware/Software Environment
 - a. Identify the manufacturer and model number of the data feeder hardware.

Digital Equipment Corporation VAX-8550

b. Identify the operating system.

VAX VMS 4.7

c. What method of timekeeping is implemented on this feeder system (Daylight Savings, Standard, Greenwich)?

Daylight Savings

d. In what time zone is this feeder located?

Central Standard Time Zone

NSP MONTICELLO NUCLEAR GENERATING PLANT ERDS DATA POINT LIBRARY

- 3. Data Communication Details
 - a. Can this data feeder provide asynchronous serial data communication (RS-232-C) with full-modem control?

Yes

. .. .

. . . .

b. Will this feeder transmit in ASCII or EBCDIC?

ASCII

c. Can this feeder transmit at a serial baud rate of 2400 bps? If not, at what baud rate can it transmit?

Yes, 2400 bps can be used.

d. Does the operating system support XCN/XOFF flow control?

Yes

 Are any problems foreseen with the NRC using XON/XOFF to control the transmission of data?

No, however the use of SUSPEND and RESUME to control the transmission of data works better as demonstrated in testing with Haliburton/NUS.

e. If it is not feasible to recontigure a serial port for the ERDS linkup (i.e., change the baud rate, parity, etc.), please explain why.

Note Applicable.

f. Do any ports currently exist for the ERDS linkup?

Yes

If not, is it possible to add additional ports?
 Not Applicable.

. . . .

2. If yes, will the port be used solely by the ERDS or shared with other non-emergency-time users? Give details.

Port will be dedicated for ERDS.

- 4. Data Feeder Physical Environment and Management
 - a. Where is the data feeder located in terms of the TSC, EOF, and contro' room?

Computer Room located in Plant Administration Building adjacent to Plant Control Room.

b. Is the data feeder protected from loss of supply of electricity?
Yes, PCS is provided with UPS (batteries with inverter and diesel generator).

c. Is there a human orerator for this data feeder?

Yes

1. If so, how many hours a day is the feeder attended?

It is planned to have the Shift Emergency Communicator (SEC) initiate the ERDS System per Emergency Implementing Procedures. An SEC is on duty 24 hours/day.