GEORGIA POWER COMPANY PLANT E.I. HATCH		PAGE 1 OF 1
DOCUMENT TITLE: RADWASTE DISCHARGES	DOCUMENT NUMBER: SO-OPS-01-1286	REVISION NO: 0

DEPARTMENT NAME: OPERATIONS

DATE OF ISSUE: 12-05-86

DATE OF TERMINATION: _____

TO: UNIT 1 & 2 SHIFT SUPV AND RADWASTE OPERATORS

Anytime a discharge is to be made from Radwaste, an Operations Dept. Supervisor will go to the Radwaste Control Room to review the paper work prior to the discharge. His review shall include the discharge permit, valve lineup, and radiation monitor setpoint. Upon completion of the review, the Supervisor will indicate in the Radwaste Log that the review has been completed and discharge can proceed. The Supervisor will then sign in the log indicating his approval.

Manager of Operations

FOIA-87-76

D/39

Interoffice Correspondence Georgia Power

Date: December 5th, 1985 LR-OPS-001-1285

Re: PLANT E. I. HATCH
Hose Station Valves

From: Lewis Sumner

To: Department Managers

Positioning of hose station valves shall be performed by Operations personnel only except when performing surveillance procedures that require the use of a hose station.

If a hose is to be connected to a system such as Service Air, Demin Water, PSW, etc., the person who wants to use the hose station must make the connection including installation of his own isolation valve that he will control. He will then notify the Shift Supervisor.

The Shift Supervisor will have the valve tagged open on a clearance. When the connection is no longer needed, the Shift Supervisor will be notified to release the clearance and close the valve. The connection will then be removed.

If the hose connection is to be used for a short period of time, an Operator may be sent to open it and stay with it until he recloses it.

Please call me if you have any questions.

H. L. Sumner
Manager of Operations

HLS:jbl

xc: T. V. Greene
J. C. Lewis

FOIA-87-76

D/42

700223A

DAILY STATUS REPORT

UNIT: HNP-1 | DATE: 12-5-86

MODE SWITCH: R/F S/D S/U (RUN)

MWTH	MWE	PRESS
2422	811	1000 PSIA

DW AVG TEMP	EQP DR LKG	FL DR LKG	CST LVL
104. °F	2.12 GPM	.48 GPM	16 FT.

HW LVL	COND VAC	OFF GAS FLOW	PRE-TREAT RAD	K FACTOR
3	27.0 IN.HG	24 SCFM	16505 μci/sec	

HEAT RATE	CORE FLOW	RX H_2O COND
10183 BTU/KWH	76.6 10^6 lb/hr	.17 μmho

STATUS OF THE FOLLOWING ITEMS NEEDED EACH MONDAY AS OF 7:00 a.m.:

RIVER LVL (DAILY) 71.22 FT.

FUEL EXPOSURE N/A MWD/T

RX COOLANT (Iodine) N/A μ/ml
ACTIVITY (Copper) ppb

ACTIVE LCO'S

NUMBER	EQUIPMENT	NUMBER	EQUIPMENT
1-86-83	FIRE BARRIERS		
1-86-446	FIRE BARRIERS		

POWER CHANGES : Notify Lab of any power changes of >15% in one hour when made.

FROM	TO	TIME	FROM	TO	TIME	FROM	TO	TIME

UNIT NARRATIVE REPORT: To include major equipment out of service, operating problems, maintenance items needing corrective action, tentative plans, and any other general comments of interest on unit operation.

S- PERFORMED DAILY TURB. TEST

Hatch Duty Officer

PREPARED BY

FOIA-87-76
D/43

DAILY STATUS REPORT

UNIT HNP-II | DATE 12-5-86

MODE SWITCH: R/F (S/D) S/U RUN	MWTH 0	MWE 0	PRESS 0

DW AVG TEMP NA °F	EQP DR LKG N/A GPM	FL DR LKG N/A GPM	CST LVL 20 FT.

HW LVL 75"	COND VAC 0 IN.HG	OFF GAS FLOW N/A SCFM	PRE-TREAT RAD N/A µci/sec	K FACTOR N/A

HEAT RATE N/A BTU/KWH	CORE FLOW 25 10^6 lb/hr	RX H_2O COND .56 µmho

STATUS OF THE FOLLOWING ITEMS NEEDED EACH MONDAY AS OF 7:00 a.m.:

RIVER LVL (DAILY,) 71.22 FT.

FUEL EXPOSURE N/A MWD/T.

RX COOLANT (Iodine) ACTIVITY (Copper) N/A µ/ml ppb

ACTIVE LCO'S

NUMBER	EQUIPMENT	NUMBER	EQUIPMENT
2-86-458	FIRE BARRIERS		

POWER CHANGES: Notify Lab of any power changes of >15% in one hour when made.

FROM	TO	TIME	FROM	TO	TIME	FROM	TO	TIME

UNIT NARRATIVE REPORT: To include maior equipment out of service, operating problems, maintenance items needing corrective action, tentative plans, and any other general comments of interest on unit operation.

Hatch Duty Officer

PREPARED BY,

December 4, 1986 Thrusday Day Shift
OSOS-Coleman U1SS-Tyer U2SS-Varnadore

Unit 1

- Maintaining 100% of RTP w/813 mwe
- Performing secondary containment test

Unit 2

- Outage continues with startup preparations.
- Problem with "B" Recirc pump is disch. valve limit switches. Electricians are going into the DW to repair them.
- Time response testing is complete
- An operations person will be stationed at the following places 24 hours per day until further notice
  - Circ water flumes to ensure that cooling towers do not overflow.
  - RF Floor to monitor SFP levels and all seal pressures.

7AM-7AM U-1 MAP/ U-2 RSS / OSOS TLB
U-1 ON LINE @ 807 MWE, U-2 IN REFUEL OUTAGE.
U-2 2B RECIRC PUMP HAS BEEN STARTED - RUNNING OK.
U-2 LCO # 2-86-397 ON RHR LOOP "A" TERMINATED
U-2 DRYWELL CLOSE OUT IS COMPLETE - DRYWELL DOOR SEAL LEAK IS COMPLETE & SAT.

0600 Thursday December 4, 1986 Unit One
Dayshift on duty Charles A Tyre

▷ Reactor Status
GMWE: 813 GMWT: 2417
WT: 76.53

▷ Plant Status
- Cleanup Recovery Group has been set up in the TSC. Curtis Coggin is the Manager of this group and all questions should be referred to him. He can be reached at extension 2791
- "B" Reactr scoop tube is locked due to fluctuations in the speed control circuit
- Radwaste is handling excess water well. There is no problems at this time.

▷ Abnormal alarms
- Cleanup System High Conductivity

0728 34GO-OPS-033-1S "ECCS Status Check" Complete & sat
0730 34SV-1H11-001-1 "Control Room Annunciator Check" Complete & unsat. MWO's have been previously written on the annunciators that did not test
0900 Shift received "Turb Gen Bearing Metal Temperature High". Recorder 1N34-TR-R075Z showed points 10, 19 & 17 reading full scale. We dispatched personnel to check the bearings associated with these points and no abnormalities were identified. An MWO on the recorder was submitted 7-16-86, however we submitted another to have these points checked.
1130 34SV-T46-001-1S Sect G "Surveillance After Secondary Containment Integrity Violation" in progress.

LE 0930 Drywell O_2 @ 3.6%

1402 Dayshift off duty Evening staff on duty Charles A Lyle

▷ Reactor Status

GMWE: 807 CMWT: 2417

WT: 76.08

▷ Plant Status

- "B" recirc scoop tube locked
- 34SV-T46-001-1S Sect G in progress on Secondary Containment.
- Cleanup Recovery Group is centered in the TSC all questions are to be directed to the Manager of this group (C. Coggins). The extension # is 2771.
- No abnormal alarms present

1507 34SV-H11-001-1 "Control Room Annunciator Test" Complete & unsat. MWO's have been previously submitted on the annunciators that did not test properly.

1530 34GO-OPS-033-1S "ECCS Status Check" Complete & sat

1613 Onsite reports PEC reports a crack on the "C" S/S Air Compressor after cooler. We have placed the "A" Compressor in service & removed the "C" one from service. Must work through to WPC- (J Newton)

1730 We have posted a man at the cooling towers to monitor the flume level. Do not allow the flume to overflow as this will hamper the "Clean up" operation at the yard drain

discharge / swamp.

1800 Property returned by M A Ferguson
Charles A Tyler

1800 NIGHT SHIFT THURSDAY 12/4/86 UNIT ONE M A Ferguson C A Tyler
UNIT ON LINE @ 808.5 MWE RATED THERMAL POWER 92% WT
1B REACTOR SCOOP TUBE LOCKED / CONTROL PROBLEMS
FUEL POOL SPILL / RECOVERY CONTINUES ; being directed from TSC.
1825 LAB REPORTS DRYWELL O2 @ 3.3% O2.
LE 1812 3451-T46-001-1 COMPLETE and SAT.
2300 3451-H11-001-1 PERFORMED UNSAT (CR Aux TEST) MWO's
written on alarms not working properly.
2305 3460-OPS-033-1 PERFORMED (ECCS STATUS CHECKS)
0045 DRYWELL O2 @ 3.1% PER LAB SAMPLE
0050 3450-N21-001-1 PERFORMED SAT (RFPT DAILY TEST)
0055 3450-N36-001-1 PERFORMED UNSAT (MAIN TURBINE DAILY TEST)
EXTRACTION CHECK VALVES NOT WORKING PROPERLY.
0315 SS MET CR on TOUR
0405 SS BACK @ CONTROL ROOM
0411 RN PROCESSED 60 310 GALS / DISCHARGED 16 610 GALS / 4335.111 MCi
0415 AIR COMPRESSOR C001C AFTER COOLER REPAIRED AND A/C
RETURNED to SERVICE.

RSS

HNP-2

0600 DAYSHIFT ON FOR 12/4/86 THURSDAY ROGER E. CARNADORE
REFUEL OUTAGE IN PROGRESS.
0816 34SV-H11-001-2 (CR ANNUNCIATOR TEST) COMP & UNSAT.
MWOS SUBMITTED ON INOP ALARMS.
0818 34GO-OPS-033-2S (ECCS CHECKLIST) COMP & SAT
0901 DW ENTRY IP FOR 2B31-F031B REPAIR
0915 34SV-T45-001-2 (Rx Bldg Inst Sump Isol.)
COMP & UNSAT. 2T45-F001, F003 - NO POSITION INDICATION
0916 57SV-MNT-001-2 (C.S. & RHR Relay Response TESTING)
IP/L. SIDEL
0941 LCO #2-86-518 (2B21-F019) TERMINATED
1044 57SV-MNT-001-2 COMP & SAT
1100 LCO 2-86-519 (EAST CABLEWAY CABLE TRAYS) INITIATED
DR#2-86-871 INITIATED AGAINST SAME
1215 LCO 2-86-520 (2B31-F031A, B) INITIATED
1207 USGS RIVER LEVEL ~~9.8~~ 12/4/86 71.08'
1514 34SV-H11-001-2 (~~ECCS CHECK~~ CR ANNUNCIATOR TEST)
COMP & UNSAT. MWOS SUBMITTED AGAINST INOP ALARMS
1515 34GO-OPS-033-2S (ECCS CHECKLIST) COMP. SAT
1528 2G41-F019 CALIB HAS BEEN CHECKED AND WAS CORRECT
1528 34SV-R43-001-2S (2A D/G OPER) COMP & SAT
1545 DR#2-86-873 FILED AGAINST SPENT FUEL POOL
LO LEVEL.)
1700 UNTIL FURTHER NOTICE THERE WILL BE OPERATIONS
PERSONNEL STATIONED 24 HRS A DAY AT.
1) COOLING TOWER - TO VERIFY LEVEL 5 1/4' LOW
2) REFUEL FLOOR - WATCH POOL LEVEL & MAINTAIN
SEAL PRESSURES.

RSS 12/5/86

1800 RELIEVED BY S. STONE
ROGER CARNADORE

1800 Night Shift: Thursday, 12-4-86, U-2, R-53
Unit Status: Outage in Progress. Placing Recirc System back in service. Should Startup soon.

1913 5755V-D11-006-2 Off gas Post Treatment Rad. Monitors Inst. FT&C and Offgass System Auto Isol. Valve Oper in Progress

1914 345V-B31-001-25 Recirc System Valve Operability Complete & Sat.

1919 LCO #2-86-520 on 2B31-F031 A&B Terminated.
345V-C71-005-25 Turbine Control Valve Fast Closure Inst F.T. Inst. in Progress

1942 A&B Recirc M-G Sets on

2034 5755V-D11-006-2 Complete & Sat.

2036 LCO # 2-86-397 on RLoop RHR Terminated.

2206 D/W Close out 3460-OPS-028-25 Complete & Sat.

2244 1st Truck of water ready to be drained into U-2 Turbine Bldg Floor drains.

2255 3460-OPS-033-25 ECCS Status Check Complete

2256 345V-H11-001-2 Complete & Unsat Some Alarms don't work when Tested MWO's written.

2302 D/W Airlock Door Seals Leak rate Complete & Sat.

0023 575V-SUV-010-25 ATT Panel 2H11-P924 Channel FT&C in Progress For Rwcu Room DT & 575V-SUV-001-25

0026 575V-SUV-010-25 and 575V-SUV-007-25 Complete & Sat.

0226 SS out of C/R For Plant Tour

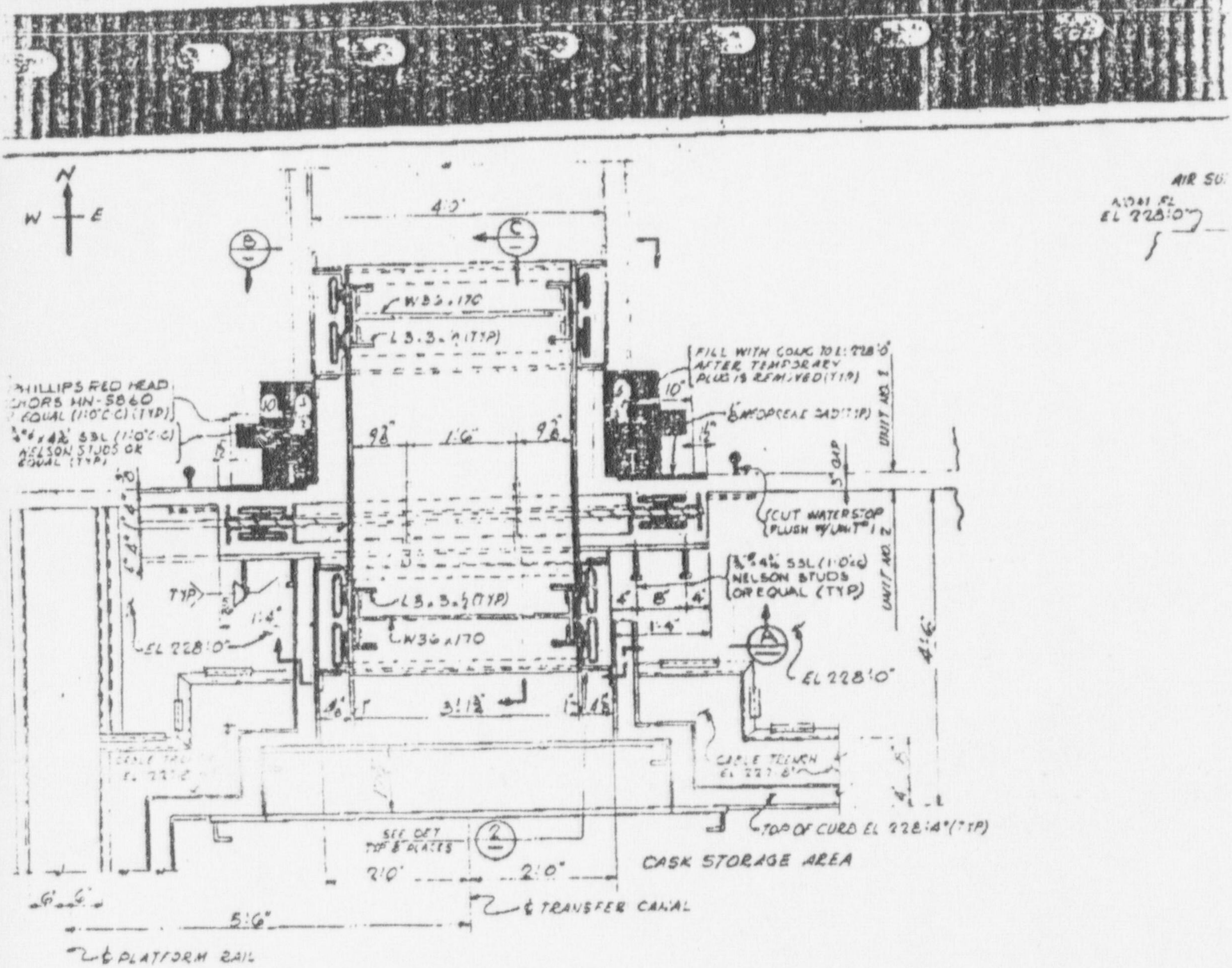
0330 SS. Back in C/R Adjusted circ water Pump A seal Water Flow To ~3 GPM. Also toured U-2 Rx Bldg.

0340 H_2 Truck onsite unloading Truck now.

D450 575V-SUV-013-25 ATTS Panel 3H11-P927 Channel FTSC

For RCIC Supp Pool Level

FOIA-87-76
D/44



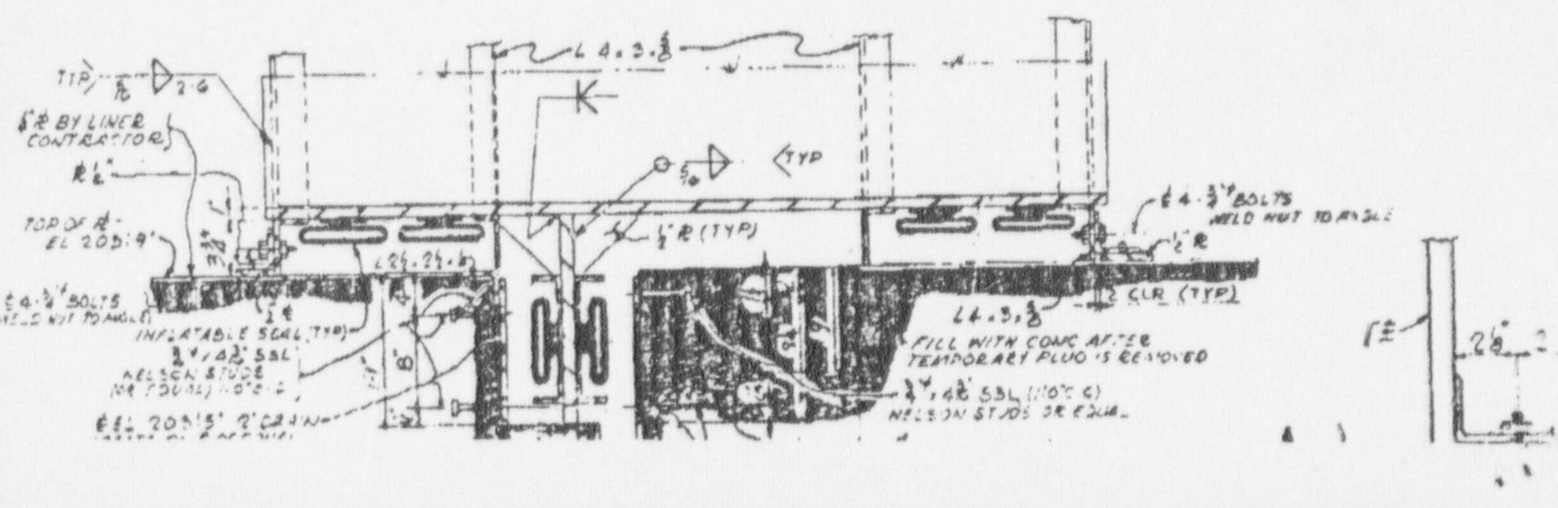
PLAN
DETAIL 1

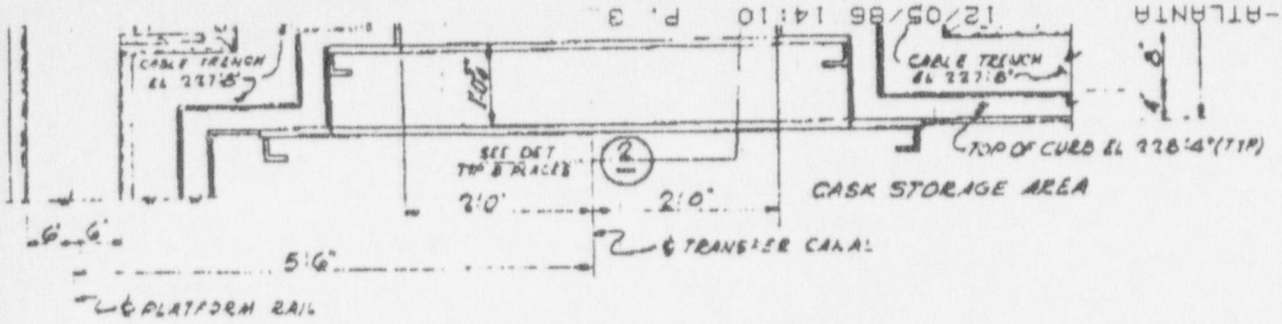
1" = 1'-0" H-25654

SEE DWG H-25571

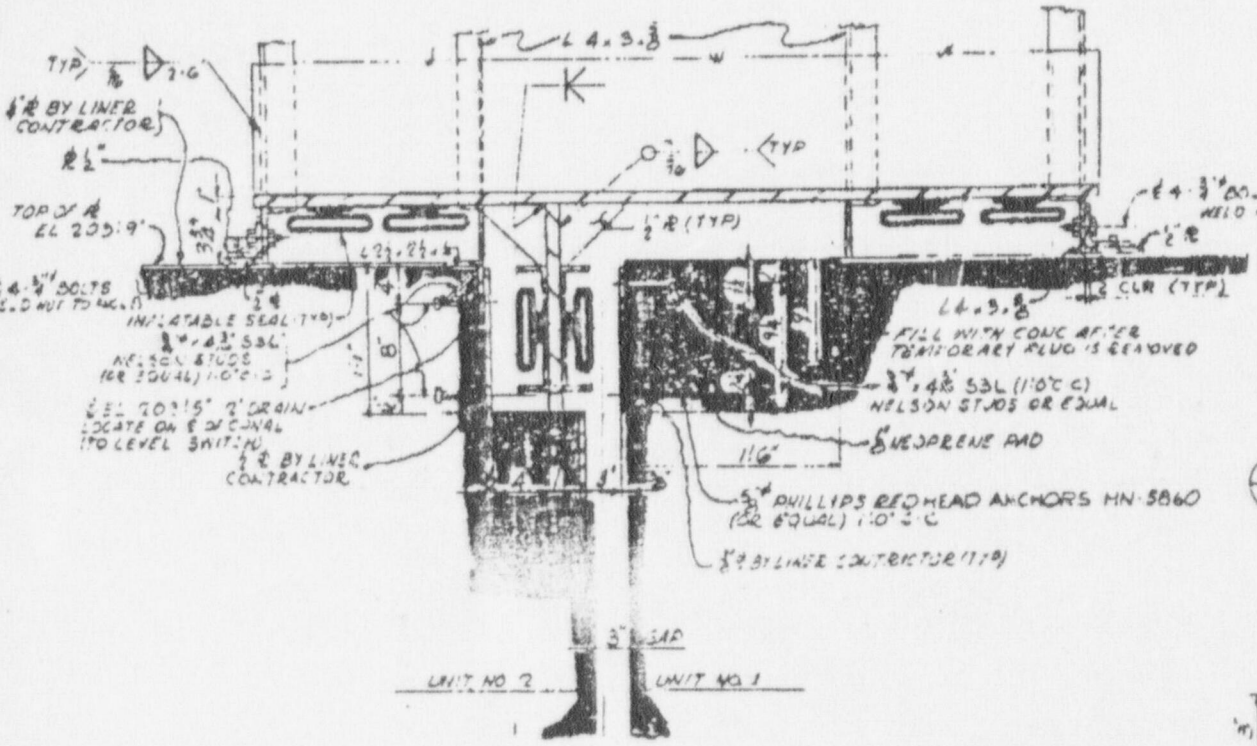
¾" COVE (TYP)

TYP

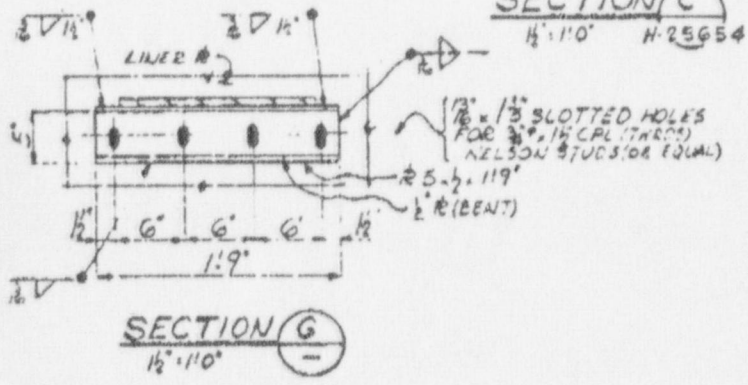




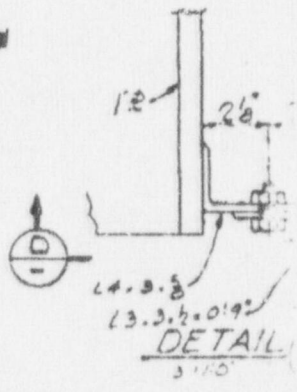
PLAN
DETAIL 1
1"=1'0" H-25354
SEE DWG H-25571



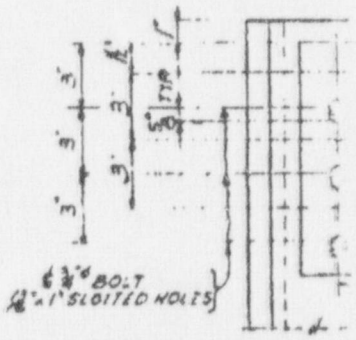
SECTION C
½"=1'0" H-25654



SECTION G
½"=1'0"

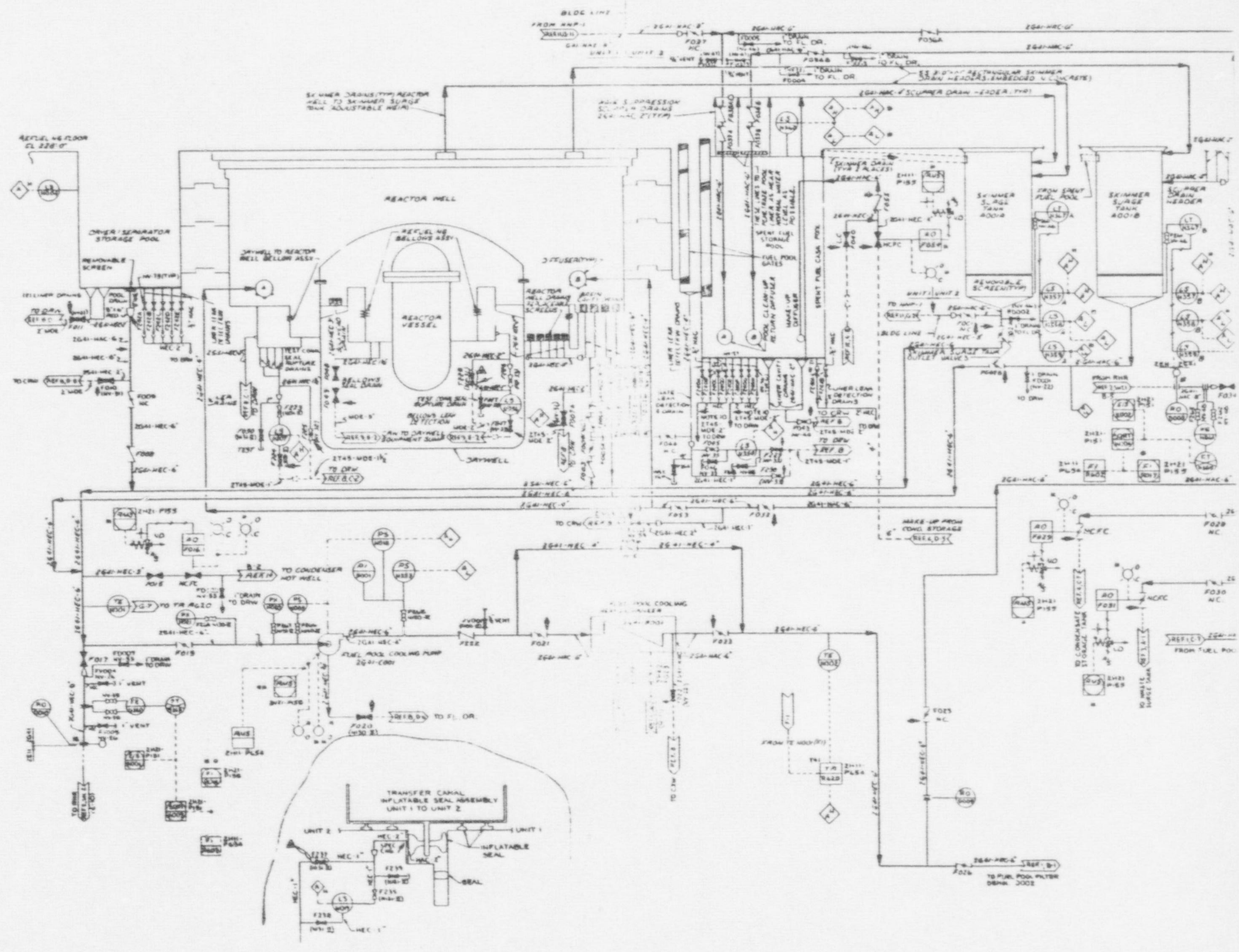


DETAIL
3"=1'0"



VIEW
3"=1'0"

SUPERVISOR MAR 77 CAMERA OPERATOR HALF-SIZE PRINT DO NOT



REACTOR WELL
REACTOR VESSEL
REFUELING BELLOWS ASSY
DRYWELL
DRYER/SEPARATOR STORAGE POOL
REMOVABLE SCREEN
REFUELING FLOOR EL 228'-0"
SPENT FUEL STORAGE POOL
FUEL POOL GATES
SPENT FUEL CASK POOL
POOL CLEAN-UP RETURN DIFFUSER
MAKE-UP DIFFUSER
SKIMMER SURGE TANK A001A
SKIMMER SURGE TANK A001B
SKIMMER DRAIN HEADER
FROM SPENT FUEL POOL
REMOVABLE SCREEN (TYP)
FUEL POOL COOLING PUMP 2G41-C001
TO CONDENSER HOT WELL
TO FL. DR.
MAKE-UP FROM COND. STORAGE
TO CONDENSATE STORAGE TANK
TO WASTE SURGE TANK
FROM FUEL POOL
TO FUEL POOL FILTER DEMIN. D002
TRANSFER CANAL INFLATABLE SEAL ASSEMBLY UNIT 1 TO UNIT 2
INFLATABLE SEAL
SEAL
UNIT 1
UNIT 2
BLDG LINE

TIME SEQUENCE OF EVENTS

(SHEET 1 OF 2)

NOTES: ALL TIMES ARE IN EASTERN STANDARD TIME (EST) AND ARE APPROXIMATE.

"*" AFTER A TIME INDICATES THAT IT WAS OBTAINED FROM OPERATORS'/ SHIFT SUPERVISOR ON SHIFT's LOGS.

MAXIMUM POSSIBLE TIME THAT WATER LEVEL WAS LESS THAN TWENTY-THREE FEET ABOVE SPENT FUEL (TECH. SPECS.) LIMIT WAS FROM 2137 TO 2255.

DATE	TIME	ACTION TAKEN/ EVENT TAKING PLACE/ ETC.
12/02/86	2200	AIR VALVE TO INFLATIBLE SEAL CLOSED.
12/03/86	0830	FIRST SKIMMER SURGE TANK LOW LEVEL ALARM RECEIVED BY UNIT ONE. OPERATORS ADD WATER NO FURTHER ACTION DEEMED NECESSARY.
12/03/86	1130	1. SECOND LOW LEVEL ALARM RECEIVED BY UNIT ONE. 2. INVESTIGATED AND CLOSED DUMP VALVE TO MAIN CONDENSER HOTWELL FROM FUEL POOL COOLING AND CLEANUP (FPC) SYSTEM.
12/03/86	1430	THIRD LOW LEVEL ALARM RECEIVED. SYSTEM VALVE ALIGNMENTS CHECKED. NO DISCREPANCIES FOUND.
12/03/86		SEARCH FOR PROBLEM CONTINUES ON EVENING SHIFT. VARIOUS FPC SYSTEM VALVES CLOSED IN ATTEMPT TO FIND LEAK.
12/03/86	1500*	LEAK DISCOVERED AT REACTOR BUILDING PENETRATION ON 112 FT. ELEVATION.
12/03/86	1615	WATER ADDED TO FUEL POOLS.
12/03/86	1815	WATER ADDED TO FUEL POOLS.
12/03/86	2137*	FUEL POOL COOLING AND CLEANUP PUMPS TRIPPED.
12/03/86		WATER LEVEL APPROXIMATELY ONE FOOT BELOW SKIMMERS WHEN OPERATOR REACHED FUEL POOLS.
12/03/86	2200	1. WATER ENTERING 112 FT. ELEVATION OF TURBINE BUILDING. 2. WATER POURING ONTO CABLEWAYS IN THE 130 FT. ELEVATION. 3. UNABLE TO OPEN DOOR TO NITROGEN STORAGE TANK AREA DUE TO WATER BEHIND DOOR. 4. WATER ADDED TO FUEL POOLS.

FOIA-87-76

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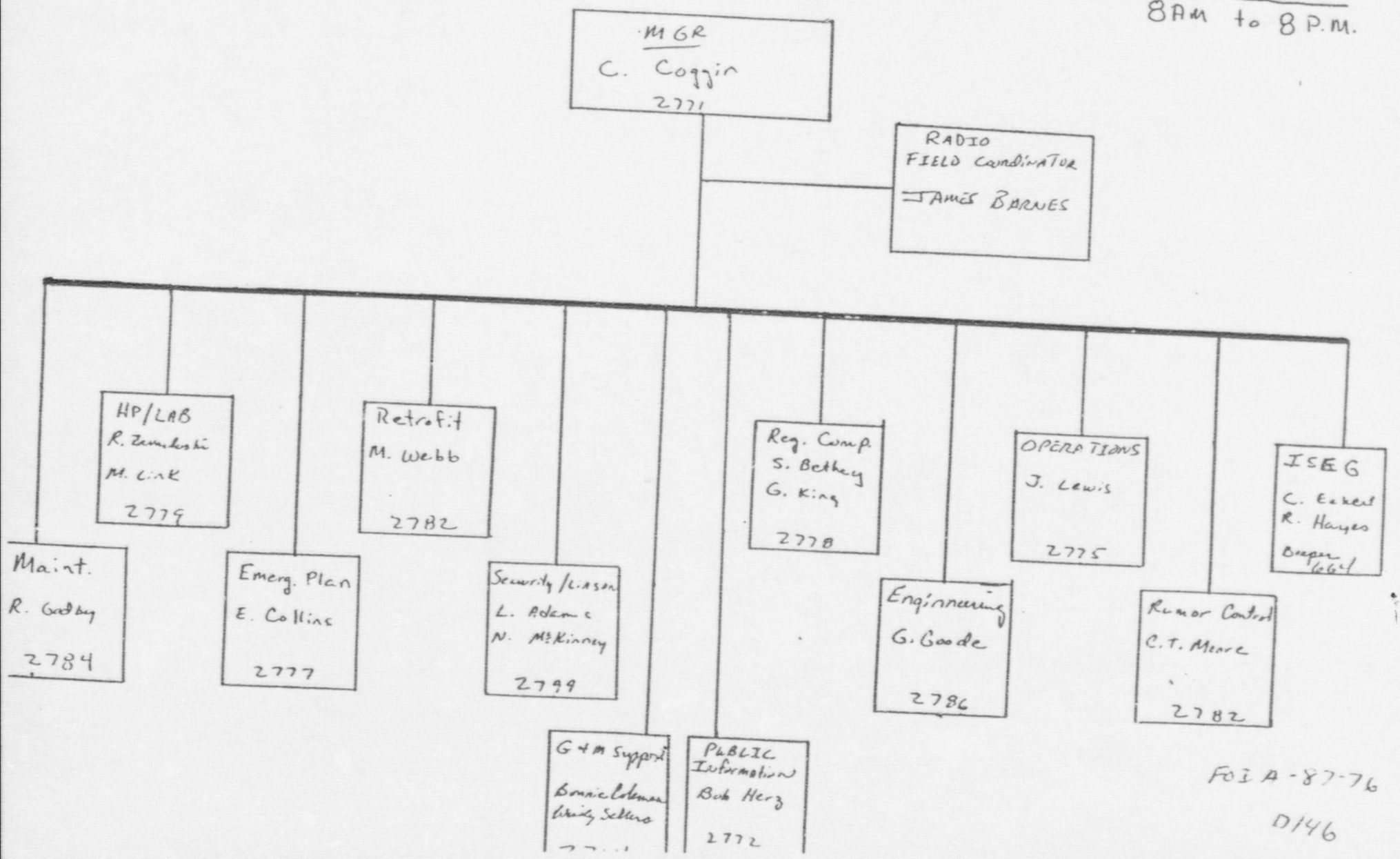
TIME SEQUENCE OF EVENTS

(SHEET 2 OF 2)

12/03/86	2202*	TRANSFER CANAL GATE LEAKING. AIR VALVE FOUND OFF. VALVE OPENED AND AIR RETURNED TO TRANSFER CANAL GATE INFLATIBLE SEAL. (PER INFORMATION FROM RESIDENT INSPECTOR, SHIFT SUPERVISOR TOLD HIM THIS WAS COMPLETED WITHIN 15 MINUTES OF 2137)
12/03/86	2203*	TRANSFER CANAL GATE INFLATIBLE SEAL FILLED.
12/03/86	2214*	LEAKS STOPPED AND FUEL POOL LEVEL WAS RISING IN A CONTROLLED MANNER.
12/03/86	2230	1. FUEL POOL LEVEL ESTIMATED TO BE FOUR FEET BELOW NORMAL. LATER MEASURED TO BE FIVE AND ONE-HALF FEET BELOW NORMAL AT 1300 on 12/04/86. 2. SHIFT SUPERVISOR FORCED OPEN DOOR TO NITROGEN STORAGE TANK AREA, REVEALING TWO TO THREE FEET OF WATER AND WATER EXITING TO STORM DRAIN.
12/03/86	2245	MANAGER OF PLANT OPERATIONS NOTIFIED AND RESPONDED TO SITE.
12/03/86	2255*	FUEL POOL LEVEL RETURNED TO NORMAL.
12/03/86	2315	VICE PRESIDENT OF PLANT HATCH ARRIVED AT SITE.
12/03/86	2330	MANAGER OF HEALTH PHYSICS AND CHEMISTRY NOTIFIED AND RESPONDED TO SITE.
12/04/86	0045*	FUEL POOL COOLING AND CLEANUP RETURNED TO SERVICE.
12/04/86	0105*	FOUND TRANSFER CANAL LEAKAGE DETECTION LEVEL SWITCH DRAIN VALVE OPEN WHEN IT SHOULD HAVE BEEN CLOSED
12/04/86	0128	NRC NOTIFIED (VIA RED PHONE) OF TRANSFER CANAL SEAL LEAK.
12/04/86	0400	NRC PROVIDED ADDITIONAL INFORMATION VIA RED PHONE.

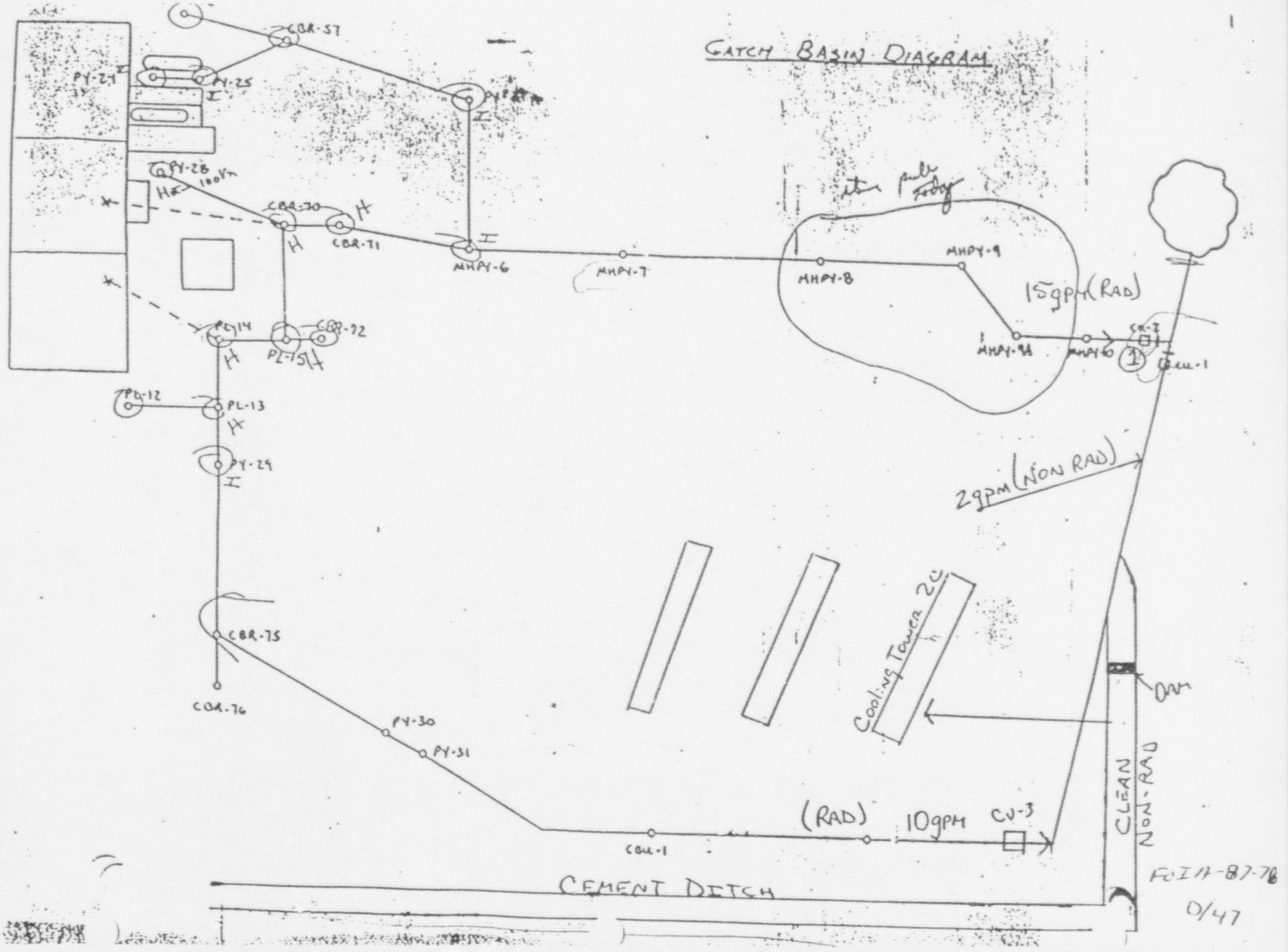
CLEAN-UP & RECOVERY ORGANIZATION

DAY SHIFT
8AM to 8 P.M.



FOIA-87-76

D146



FOIA-87-78

D/47

SEQUENCE OF EVENTS RELATING TO LOSS OF FUEL POOL INVENTORY

Dec. 2, 1986
2200 hrs EST

Air valve to inflatable seal closed.

Dec. 3, 1986
0830 hrs

First skimmer surge tank low level alarm received by Unit 1. Operators add water. No further action deemed necessary.

Dec. 3, 1986
1130 hrs

Second low level alarm received by Unit 1.

Investigated and closed dump valve to Main Condensor Hotwell from FPC System. Believed to be reason for low level.

Dec. 3, 1986
1400 hrs

Leak discovered at Rx Bldg pen. on 112' el.

Dec. 3, 1986
1430 hrs

Third low level alarm. System valve alignments checked. No discrepancies found.

Search for problem continues on evening shift. Various FPC System valves closed in attempt to find leak.

Dec. 3, 1986
2400 hrs

Fuel Pool Cooling and Cleanup returned to service.

Dec. 4, 1986
0128 hrs

NRC notified of transfer canal seal leak by Rec Phone.

Dec. 4, 1986
0400 hrs

NRC provides additional info by Rec Phone.

Health Physics begins taking samples and surveys.

Maximum possible time water level was less than 23' above spent fuel. (T/S Limit)

2137 hrs

Fuel pool cooling pumps tripped.

Water level one foot below skimmers when operator reached fuel pools.

2200 hrs

1. Water entering 112' elev. Turb Bldg.
2. Water pouring onto cableways in Turb Bldg. 130' el.
3. Unable to open door to Nitrogen storage tank due to water behind door.

2230 hrs

1. Fuel pool level estimated to be 4' below normal.*
2. Low Seal Pressure observed and corrected.
3. Shift Supv. forced open Nitrogen storage tank doors revealing 2 to 3 ft. of water and water exiting to storm drain.

* Later measured to be 5.5' below normal at 1300 hrs, Dec. 4, 1986.

2245 hrs

Manager of Plant Operations notified and responded to site.

2255 hrs

Fuel pool level returned to normal.

2315 hrs

Vice President of Plant Hatch arrived at site.

2330 hrs

Manager of Health Physics and Chemistry notified and responded to site.

FOIA-87-76

D/48

SS Charles Tyre — Keep eye on alarm — feel up
U-1 — added exp —

4th

SS Roger Fornadore
U-2

(SP)
OSCS TIM BIERSKE

PED ROWSKE
DURWOOD TOOTLE (SHUT THE VALVE)

FOIA-87-76
D/49

SAFETY LIMIT VIOLATION (Continued)

c. A Safety Limit Violation Report shall be prepared. The report shall be reviewed by the PRB. This report shall describe (1) applicable circumstances preceding the violation, (2) effects of the violation upon facility components, systems or structures, and (3) corrective action taken to prevent recurrence.

d. The Safety Limit Violation Report shall be submitted to the Commission, the SRB and the Manager of Nuclear Generation or the Vice President and General Manager Nuclear Operations within 14 days of the violation.

6.8 PROCEDURES

6.8.1 Written procedures shall be established, implemented and maintained covering the activities referenced below:

a. The applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, Revision 2, February 1978.

b. Refueling operations.

c. Surveillance and test activities of safety related equipment.

d. Security Plan implementation.

e. Emergency Plan implementation.

f. Fire Protection Program implementation.

g. PROCESS CONTROL PROGRAM implementation.

h. OFFSITE DOSE CALCULATION MANUAL implementation.

6.8.2 Each procedure of 6.8.1 and other procedures which the General Manager - Plant Hatch has determined to affect nuclear safety, and changes thereto, shall be reviewed by the PRB and approved by the appropriate member of plant management, designated by the General Manager - Plant Hatch, prior to implementation. The General Manager - Plant Hatch will approve administrative procedures, security plan implementing procedures, emergency plan implementing procedures and changes thereto. All other procedures of this specification and changes thereto will be approved by the department head designed by the General Manager - Plant Hatch. The procedures of this specification shall be reviewed periodically as set forth in administrative procedures.

6.8.3 Temporary changes to procedures of 6.8.1 above may be made provided:

a. The intent of the original procedure is not altered.

Clipped From: THE ATLANTA JOURNAL-CONSTITUTION (WEEKEND) Date: Saturday, Dec. 6, 1986

Uncorrected maintenance problem led to Hatch plant spill, official says

By Bob Deans
Staff Writer

A maintenance problem persisted for weeks, perhaps months, before finally leading to an error that caused 141,000 gallons of low-level radioactive water to spill at the Hatch nuclear power plant, Georgia Power's top nuclear official said Friday.

Further, the volume of Wednesday's spill would have been limited if an alarm hadn't failed, said James P. O'Reilly Jr., the Georgia Power Co.'s senior vice president in charge of nuclear operations.

A plant employee had rendered the alarm inoperative in October, said Peter Holmes-Ray, the U.S. Nuclear Regulatory Commission's senior resident inspector at Hatch. He said that apparently the worker either misinterpreted instructions or was given wrong instructions concerning maintenance of the alarm, which is designed to signal the type of leak that happened Wednesday.

The spill occurred after a worker closed a valve that was being used as part of a makeshift solution to problems created by a faulty pressure regulator, Holmes-Ray said. NRC inspectors are investigating the accident to determine whether safety regulations have been violated.

Holmes-Ray said Friday that some 141,000 gallons of contaminated water was accidentally released over a period of some 11 hours beginning just before noon Wednesday. That was about three times as much as Georgia Power officials had estimated Thursday after a preliminary review of the accident.

As much as 100,000 gallons of the contaminated water may have flowed into a nearby swamp, which drains into the Altamaha River, O'Reilly said.

By late Friday, no injuries had resulted from the spill and NRC inspectors said it posed no imminent threat to plant workers, area residents or wildlife near Hatch, 11 miles northwest of Baxley.

The inspectors said Friday that the contaminated water appeared to be contained in the swamp — which is on Georgia Power property — and there were no indications that any of it had entered the Altamaha.

Meanwhile, a member of the NRC's Advisory Committee on Reactor Safeguards said Friday that improper maintenance practices that led to the spill raised serious questions about Hatch operations.

"It was an open invitation to trouble," said the adviser, Jesse C. Ebersole. "Somebody didn't know what the hell he was doing," said Ebersole, retired head nuclear engineer in the Tennessee Valley Authority's engineering design division.

The radioactive water escaped from a large pool used to store spent nuclear fuel at Hatch.

Spent nuclear fuel is highly radioactive. Water is used in the spent-fuel storage pool as a shield from radioactivity. The NRC considers the water to be mildly radioactive.

No nuclear reactions take place in the storage pool, which is separated from the plant's nuclear reactors.

The storage pool water began leaking after a series of inflatable rubber seals collapsed. The seals collapsed because a worker turned off an air valve, shutting off the air pressure that kept the seals inflated.

The worker turned off the valve because it was only partly opened and is normally kept fully open, said Thomas Beckham, Georgia Power vice president in charge of Hatch operations.

The valve was only partly open because a pressure regulator had failed, and the valve was being used to control air pressure to the seals, Beckham said.

NRC inspectors at Hatch have been unable to determine how long the regulator had been malfunctioning, because its condition was not reported by maintenance staff.

O'Reilly said, however, "Obviously the condition existed for several weeks or months."

The NRC investigation is aimed at showing, among other things, whether Hatch employees violated safety regulations by failing to repair the regulator immediately and relying instead on a valve to control air pressure.

Ebersole, the NRC adviser, said that the practice was clearly improper, even if no regulations were violated.

"That was a maneuver which shouldn't have been allowed," he said. "They should've opened it (the regulator) up, sealed it and repaired it."

The valve, he said, was not designed to regulate pressure.

Georgia Power's O'Reilly, the former administrator in charge of the NRC's Atlanta regional office, said that he was investigating the accident and was reviewing all operations procedures that led to it.

"This issue is a problem for me," O'Reilly said. "I want to know who knew about this valve . . . It was never reported."

O'Reilly said components of the seal system will be modified to prevent a repeat of the failure.

"We also will enhance our ability to monitor the losses, because I wasn't particularly pleased with that," O'Reilly said, referring to the failure of the alarm designed to signal a leak in the storage pool.

50,000 gallons of radioactive water spills at Hatch nuclear power plant

By Bob Deans
and David Corvette
Staff Writer

BAXLEY, Ga. — About 50,000 gallons of low-level radioactive water was accidentally released from a fuel storage tank at the Hatch nuclear power plant near here Wednesday night, according to the Nuclear Regulatory Commission.

NRC spokesman Joe Gilliland said Thursday it appeared that the spill posed no imminent danger to plant workers, area residents or wildlife.

Most of the water remained inside plant buildings, but as much as 10,000 gallons flowed out of the building and into a swamp that drains into the Altamaha River, Gilliland said.

Thomas Beckham, the Georgia Power Co.'s vice president in charge of operations at Hatch, said late Thursday that apparently no radioactive water had made its way into the Altamaha.

He said that Georgia Power workers using heavy earthmoving equipment had built a dirt dam early today to try to prevent the water from reaching the Altamaha. The river is separated from the plant by roughly 400 yards of swampy, wooded ground, all of which is part of the Hatch plant site.

At 10:02 p.m. Wednesday, alarms sounded inside the plant, indicating that the water level had dropped some five feet below its normal 39-foot depth in a large pool where spent nuclear fuel is stored.

Beckham said the water level fell because a worker had shut a valve, which cut off air pressure used to hold shut a rubber seal that normally prevents water from flowing out of the storage pool.

He said the problem was corrected within 30 minutes after the leak was detected, preventing further loss of water.

See SPILL, *Page 20-A*

Spill

From Page 1-A

"There was no mechanical failure, it was operator error," said Georgia Power spokesman Gordon Van Mol. "We'll look very carefully at the procedure that the operator either was or was not following."

The accident did not affect plant operations, Van Mol said.

Georgia Power and NRC technicians were monitoring the radioactive levels in the Altamaha on Thursday. Both Van Mol and Gilliland said that the river's radioactive levels were normal.

If radioactive water had reached the river, it would have been diluted, Van Mol said, adding that the Altamaha generally flows at a rate of some 6 million gallons a minute.

"We don't really anticipate any danger to wildlife," said Jim Setser, chief of program coordination for the Environmental Protection Division of the state Department of Natural Resources. Setser said DNR officials had been sent to the plant site early Thursday.

While outdoor radiation levels at the plant site reached twice the normal amount found naturally in the environment, there was no threat posed to the community, said Steve Ewald, Georgia Power's manager of radiological safety.

About 50 health physics technicians were sent to the spill site to monitor radiation levels in the soil and on the clothing of cleanup crews traveling to and from the area, he said.

Dane Bruce, chief of operations at the Appling County Emergency Management Agency in Baxley, said the town gets its drinking water from deep water wells, not the Altamaha.

Hatch, a twin-unit plant, is the only nuclear plant Georgia Power currently operates. Hatch Unit II has been shut down for refueling, Van Mol said. Unit 1 was operating and is continuing to operate, he said.

Each unit has in its concrete containment building a large pool used to store uranium after it has been used as fuel at Hatch.

The storage pool is filled with water, which acts as a shield against radioactivity. No radioactive reactions take place inside the pool.

The spent fuel is highly radioactive. Van Mol said the water covering the fuel, however, is "slightly radioactive."

Added the NRC's Gilliland, "It's not of a radioactive level that would be hazardous to someone standing next to it. But it's radioactive water and it's supposed to be kept under control."

Gilliland said that about 50,000 gallons of water had been released from the pool, but apparently between 40,000 and 45,000 gallons had been retained inside the reactor building.

Gilliland said there was no danger that water in the storage pool could have drained to a level that would have left the spent fuel exposed. All of the pool's drainage ports are positioned above that level, he said.

Georgia Power generally keeps about 39 feet of water in the pool, which is roughly a 40-foot cube. The spent fuel stands about 15 feet high, and is contained in pellets inside rods.

Van Mol said that Georgia Power had contacted both the NRC, as is required in such incidents, and the Georgia Department of Natural Resources, to alert both agencies of the accident.

Baxley officials said Georgia Power officials failed to notify city leaders and waited nearly 18 hours before alerting Appling County authorities to the spill.

"I didn't know we had one," Baxley City Manager Sam W. Dunn said Thursday when asked about the spill.

Appling County Manager Charles Rosebrough said he received no direct communication from plant officials or Georgia Power representatives.

He said he learned of the mishap from the Appling County Emergency Management Agency at 3 p.m. Thursday, about 18 hours after the spill was first noticed Wednesday night.

"We notified everyone we were required to," said Georgia Power's Ewald. "I can't go talking to city managers."

Said Ewald, "If it had been an emergency, we have a full-blown emergency notification system where everyone would have known within 15 minutes, but it was not even close to an emergency."

Wednesday night's accident was the first of its kind at Plant Hatch, Van Mol said. "There have been other incidents where there have been leaks, and things like that to be dealt with," he said. "But that's the first time this has happened."

Van Mol said Georgia Power officials would closely examine the operations surrounding the incident. "There are not many things that happen at a nuclear power plant twice, of even a minor nature, and this is certainly not minor," he said. "It was not a serious accident, by any means, but it certainly shouldn't have happened."

Georgia Power owns 50 percent of the Edwin I. Hatch nuclear power plant. The Oglethorpe Power Corp., which provides electricity to the state's cooperative electric companies, owns 30 percent. The rest is owned jointly by the city of Dalton and by the Municipal Electric Authority of Georgia, which provides electricity to the state's municipal electric companies.

Georgia Power currently is building its second nuclear power plant, Plant Vogtle, on the Savannah River 25 miles south of Augusta.

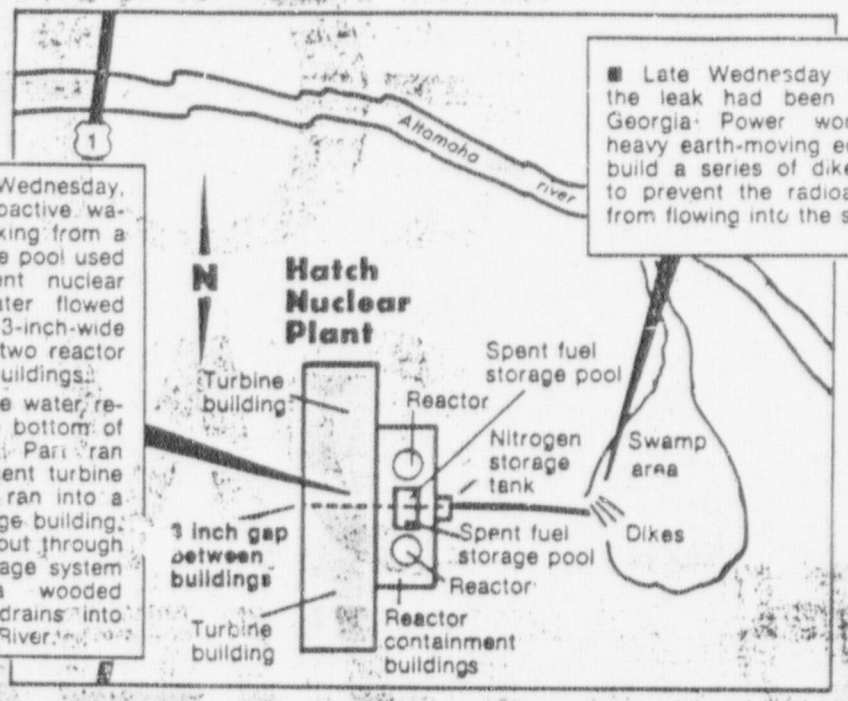
Spill at Plant Hatch

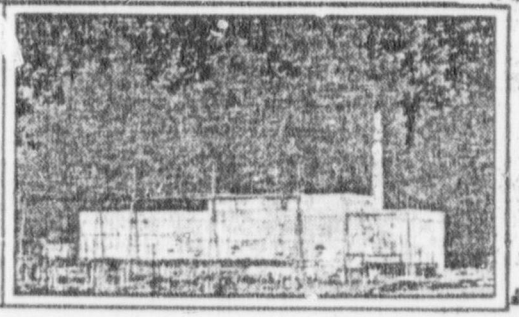
Where the water went

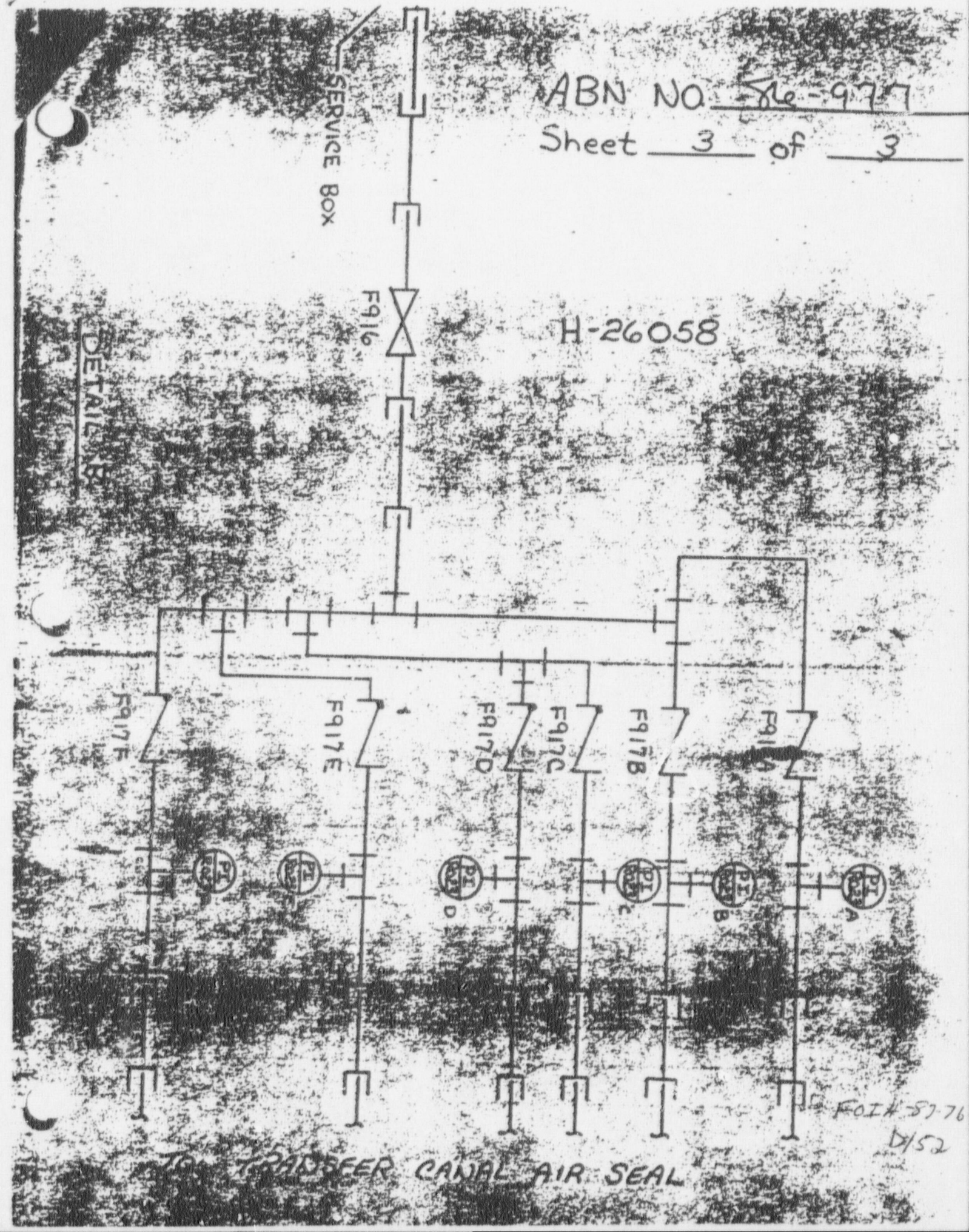
■ Sometime Wednesday, low-level adioactive water began leaking from a seal on a large pool used to store spent nuclear fuel. The water flowed down into a 3-inch-wide gap between two reactor containment buildings.

■ Some of the water remained in the bottom of the buildings. Part ran into the adjacent turbine building, part ran into a nitrogen storage building, and part ran out through a storm drainage system and into a wooded swamp that drains into the Altamaha River.

■ Late Wednesday night, after the leak had been discovered, Georgia Power workers used heavy earth-moving equipment to build a series of dikes designed to prevent the radioactive water from flowing into the swamp.






ABN NO. 56-977
Sheet 3 of 3
SERVICE BOX
F916
H-26058
DETAIL B
F917F
F917E
F917D
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F917A
D
C
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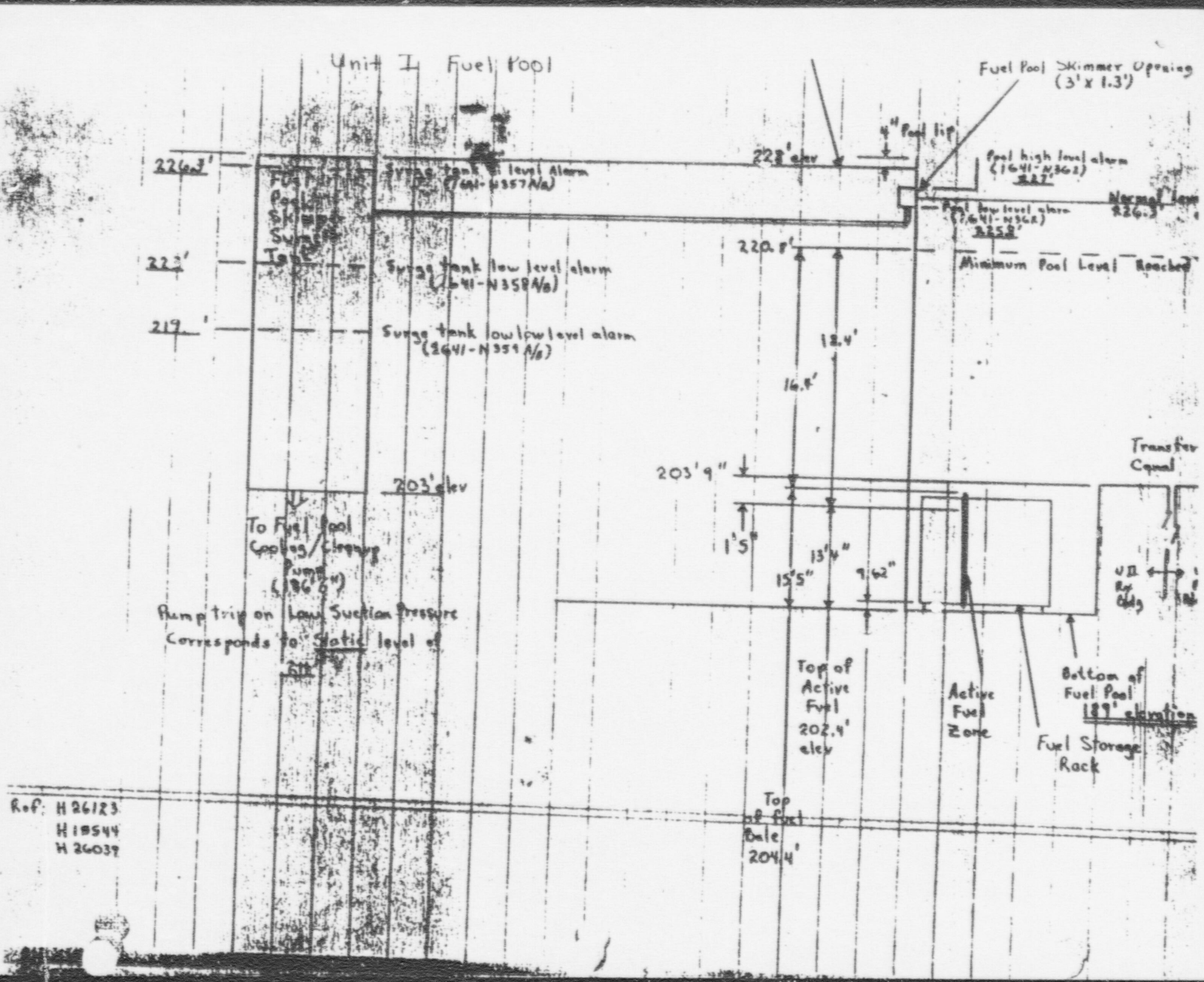
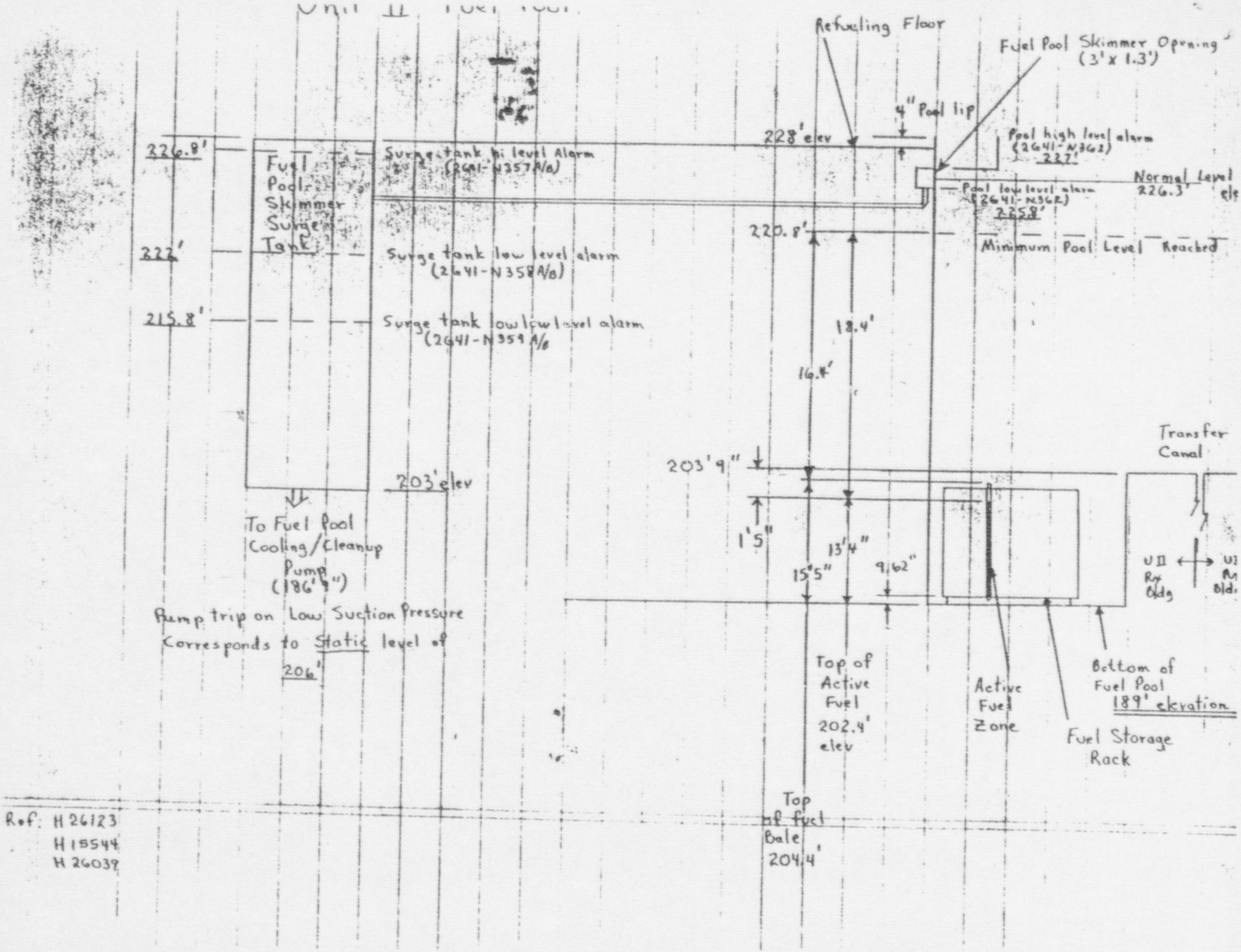
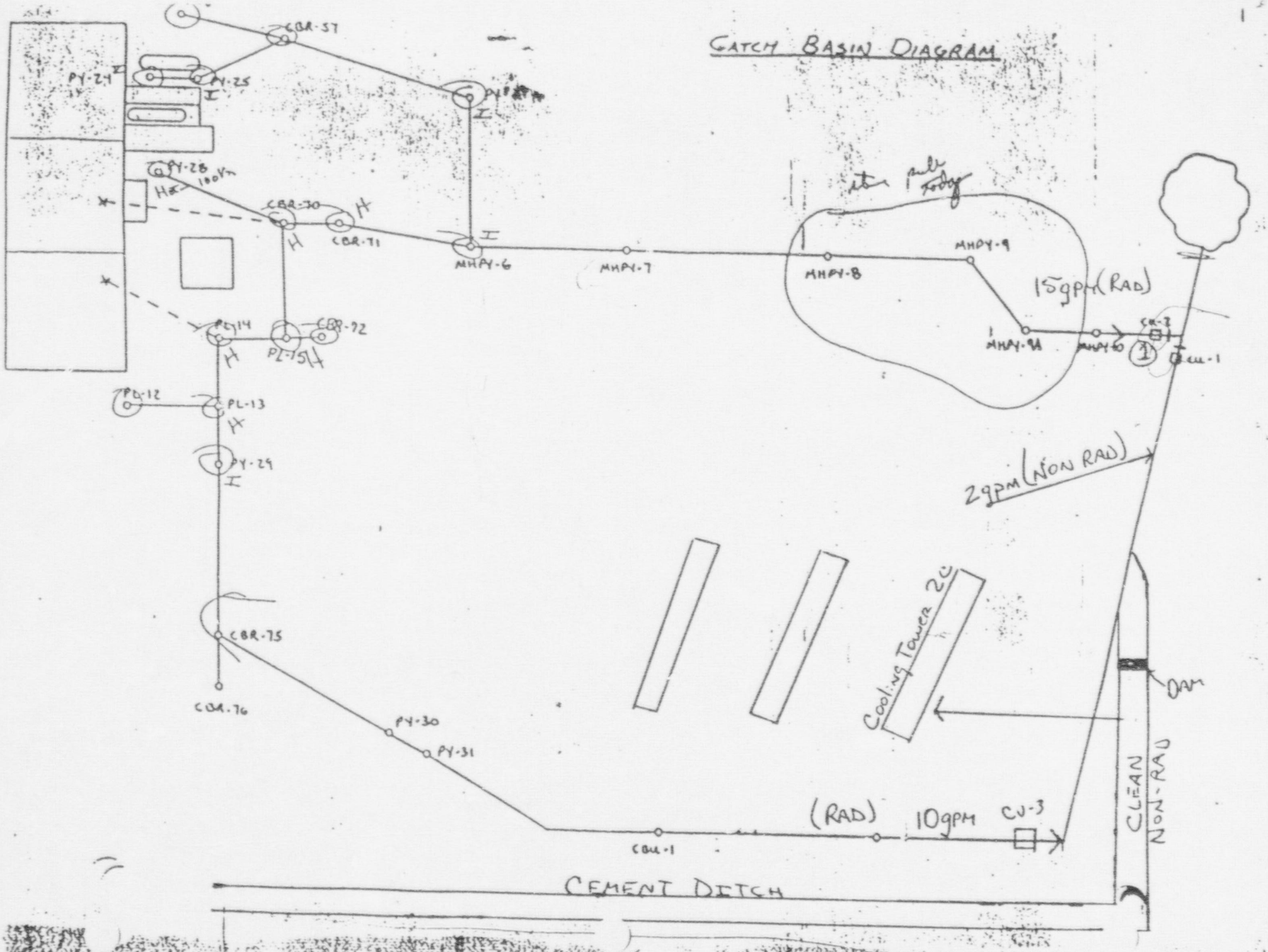
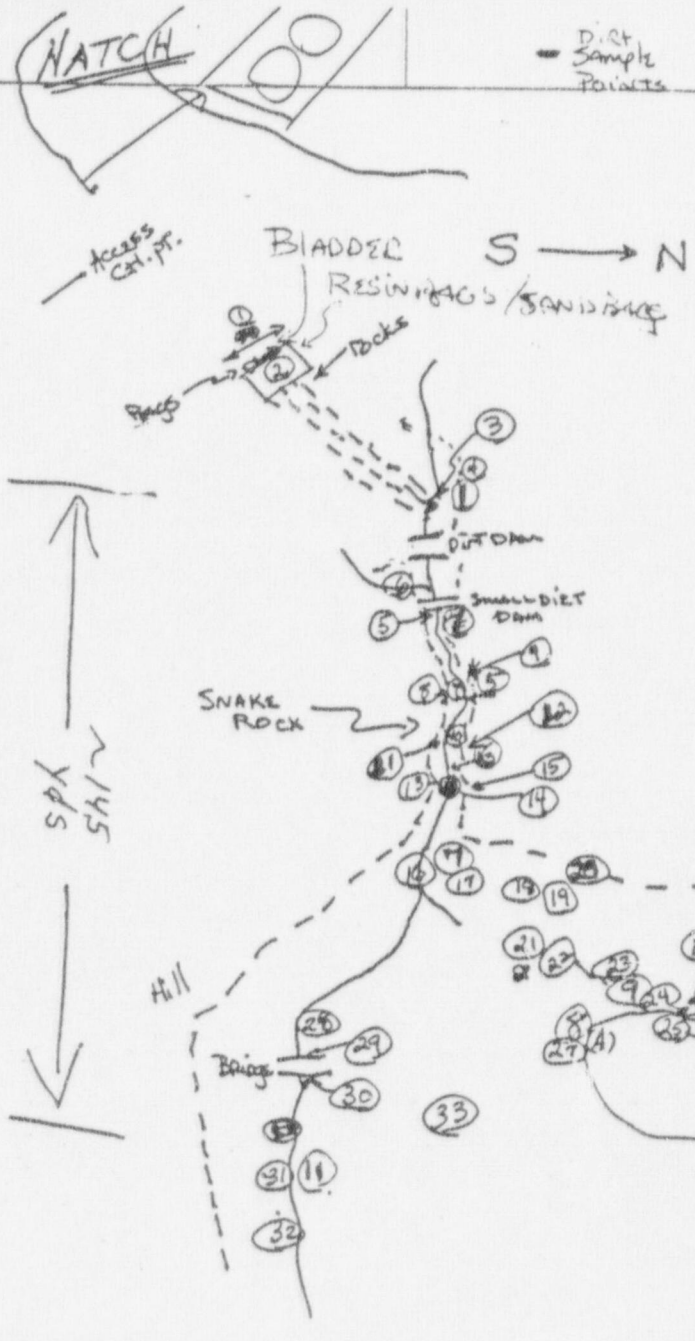
A
FOIA-57-76
D/52
TO TRADEER CANAL AIR SEAL


Unit 1 Fuel Pool
Fuel Pool Skimmer Opening (3' x 1.3')
4" Pool lip
228' elev
Pool high level alarm (1641-N362)
227'
Normal Level 226.3'
Pool low level alarm (1641-N362)
225.8'
220.8'
Minimum Pool Level Reached
226.3'
223'
Surge tank high level Alarm (1641-N357 N/a)
Surge tank low level alarm (1641-N358 N/a)
219'
Surge tank low low level alarm (1641-N359 N/a)
12.4'
16.8'
203'9"
203' elev
Transfer Canal
To Fuel Pool Cooling/Cleaning Pumps (1136 GPM)
1'5"
13'4"
15'5"
9'62"
Pump trip on Low Suction Pressure Corresponds to Static level of 211'
Top of Active Fuel 202.4' elev
Active Fuel Zone
Bottom of Fuel Pool 189' elevation
Fuel Storage Rack
Top of Fuel Bale 204.4'
Ref: H 26123
H 19544
H 26039


Refueling Floor
Fuel Pool Skimmer Opening (3' x 1.3')
4" Pool lip
228' elev
Pool high level alarm (2641-N362) 227'
Normal Level 226.3' elev
Pool low level alarm (2641-N362) 225.8'
220.8'
Minimum Pool Level Reached
226.8'
Fuel Pool Skimmer Surge Tank
Surge tank hi level Alarm (2641-N357 A/B)
222'
Surge tank low level alarm (2641-N358 A/B)
215.8'
Surge tank low low level alarm (2641-N359 A/B
18.4'
16.4'
203' elev
203'9"
Transfer Canal
To Fuel Pool Cooling/Cleanup Pump (186'9")
1'5"
13'4"
15'5"
9.62"
Pump trip on Low Suction Pressure Corresponds to Static level of 206'
Top of Active Fuel 202.4' elev
Active Fuel Zone
Fuel Storage Rack
Bottom of Fuel Pool 189' elevation
Top of fuel Bale 204.4'
Ref: H 26123
H 15544
H 26039


CATCH BASIN DIAGRAM
CBR-57
PY-24
MH-25
PY-26
PY-28
100 Ft
CBR-30
CBR-71
MHPY-6
MHPY-7
MHPY-8
MHPY-9
15gpm (RAD)
MHPY-9A
MHPY-10
CB-2
CBU-1
PL-14
CBR-72
PL-15
PL-12
PL-13
PY-29
29gpm (NON RAD)
CBR-75
CBR-76
PY-30
PY-31
Cooling Tower 2
(RAD) 10gpm
CV-3
CBU-1
CLEAN NON-RAD
CEMENT DITCH



- Dirt Sample Points

8:00 CST
12-6-86

	μR/hr	COMMENT
1	30	
2	400	
3	400	ACROSS CREEK — 4ft
4	300	
5	200	
6	100	
7	250	
8	200	
9	30	
10	800	
11	200	4ft wide (~20ft from
12	30	at both BANKS
13	40	
14	600 ~~400~~	
15	20	(at RAD ribbon)
16	280	
17	200	20ft from 16
18	220	" " 17
19	1800	" " 18
20	150	
21	600	20ft from 19
22	80	" 10ft from 21
23	40	
24	60	~~24 600~~
25	120	(at #9)
26	40	
27	25	
28	600	ctr of creek 2ft wi
29	500	WIDER BR
30	1500	
31	100	
32	16	
33	16	

— No migration overnight

— A seepage path into & from the river
No detectable activity on river side

— No flow from outfall

— No contamination in "clean" outfalls

Lost from pool — 141.5K including 12/2 makeup

— 17K RW total U1 & U2

— 15 → 50K may still be in exp joint

40K best guess

Lighting — problem

Processed first tank — now in U-2 RW facility ≃ 4K

Alarm printer for 12/4 or 12/3

FOIA-87-76

D/53

Loss of secondary containment —

Licensee knowledge of precursors

ANALYZED ?

PREVIOUS SEAL HISTORY ?

SEAL
H25654

≃ 18" in both pools

— Leak ~~Detection~~ Detection on seal did not work

— Storm drain dep to outfall = swamp ≃ 5000 gals

— Denied damage

On
Licensee made press release
State inspector 2:30

— Root cause — Valve should have been controlled
what procedure?
Licensee Qual?

— Why Leak detection did not work

— Water volume — isotopic

— 84-03 & IEN 84-93

— Potential risk of fuel pool draining
Fuel transfer

Areas Contaminated in Plant

- Control Bldg 130' el east ~~west~~ [initials] cableway (between HP office and Rx Bldg)
- Hot machine shop, N_2 storage area
- U1 Turb Bldg 130' el east cable way
- U1 Rx Bldg south side 130' el
- U2 Rx Bldg 130' el NW corner
- U2 Turb Bldg 130' el east cable way
- U2 Turb Bldg 112' el NE corner walkway

All cleaned up except N_2 storage area
[illegible] | 12/[illegible]/82 0830 EST

FOIA-87-76

D/54

DCR 1-86-422 —

2-86-423 —

~~Provide~~ Provide ~~communication~~ & redundancy of seals (ie split air supply)

[expect complete split today]

w/o cavity / fuel pool work until outage

Clearances on seal air sys supp valves in place 12/4 comp 1730 12/4

start with THE [illegible]

12/3 2459 cst

12/5/86

Bob Dean — ATL CONST.
ROGER WALKER —
FLOYD CANTRELL —
PH-R —

Do we know what did procedures require on that valve which was closed and isolated the air to the seal — ?

Low level alarms from 1430 12/3 to 2130 12/3
alarms [illegible]

12/4
0230 — CORPORATE OFFICE UP TO PRESIDENT —
[illegible] recovery center (TSC) 0700 12/4

[illegible] to get [illegible] in — ≈1300 12/4

[illegible] they get in —

12/4 Procedure 3160-08 -30-15 [illegible] off seals (air [illegible])

High level [illegible] — what — normal letdown path

[illegible] the alarms, [illegible]

Water in [illegible] contaminated? — 112 3 [illegible]

Southern Company Services, Inc.
Post Office Box 2625
Birmingham, Alabama 35202
Telephone 205 870-6011

TO: Pete Holmes

Southern Company Services
the southern electric system

SOUTHERN COMPANY SERVICES
INVERNESS CENTER PARKWAY
BUILDING 40
BIRMINGHAM, AL 35244

THIS FORM MUST BE FILLED OUT COMPLETELY.
PAGES MUST BE NUMBERED & CIRCLED IN THE UPPER RIGHT HAND CORNER.

DATE: 12-6-86

TELECOPY TO: GLENN GOODE

LOCATION: PLANT HATCH

SENDER IS: ROD MILLER x 5594

NUMBER OF PAGES TO FOLLOW: 1

****DO YOU WISH TO RETAIN THIS COPY? X YES _____ NO

OMNIFAX G93 AUTOMATIC (205) 868-5145

VERIFICATION NUMBER (205) 868-5735

TELECOPY OPERATOR:

CAROLYN

OTHERS: _____

FOIA-87-76

D/55

PRELIMINARY

RESPONSE TO NRC CONCERNS

Question 1. What would be the flow rate past the seals in the transfer canal assuming a catastrophic, sudden failure of the seal assembly?

Answer: The flow rate past the seals assuming the above conditions is a function of the static head of the water level in the spent fuel pools, the heigth of the water level against the transfer canal assembly (flow area), and the assumption used for the type of flow. Assuming the flow area is a slot or weir around the outside of the transfer assembly, the flow rates can be calculated at various fuel pool levels. The approximate flow rates at various levels are given below:

Elevation of Water	Flow Rate (GPM)
226'9"	6873
221'9"	4759
216'9"	2921
211'9"	1410
206'9"	324

Question 2. With full make-up flow, what would be the equilibrium level in the fuel pool?

Answer: Assuming a make-up flow of 1000 GPM from both the Unit 1 and the Unit 2 condensate transfer pumps, the level will stabilize at an approximate elevation of 210 ft. This is 6'3" above the bottom of the transfer canal.

Question 3. Assuming the problem is identified and make-up flow is initiated when the level dropped to 5 1/2 ft. below normal, how much longer would the level continue to drop?

Answer: Assuming a normal pool elevation of 226'9", that the seals have not been restored and using the same assumptions as those given above, the time required for the fuel pool level to stabilize would be approximately 5 hours. It should be noted that using the calculation assumptions, it takes approximately 18 minutes for the water level to drop the initial 5 1/2 ft.

Question 4. What would area radiation conditions be when equilibrium is reached?

Answer: Calculations to determine the conditions would be extremely time consuming. After all of the equipment has been identified that would be uncovered and the position of all fuel bundles identified, this calculation could be completed in approximately 4-6 weeks.

NRC EXIT INTERVIEW

If any of the following apply, the information shall be considered confidential. The department representative shall inform the inspectors of this fact. By signing this form, the department representative documents his understanding of this restriction.

1. The information is confidential or normally considered so.
2. The information was transmitted to the NRC in confidence.
3. The information is not public.
4. Disclosure of the information would cause competitive damage to GPC.
5. Safeguards or Security information.

DATE: Dec. 6, 1986

NAME	COMPANY	TITLE
✓ R. D. BAKER	GPC	Nuclear Licensing Manager-Hatch NSLD
✓ C. T. MOORE	GPC	EP & TRNG MGR
✓ C. C. Eckert	GPC	Nuclear Safety Eng. MGR
✓ D S READ	GPC	Plant Support MGR
S. J. Bethay	GPC	REG. COMP. SUPV -
✓ J. T. Beckham Jr	GPC	V.P.
✓ S. B. Tipps	GPC	Supt. of Reg. Compliance
✓ Alvis Sumner	GPC	Manager of Operations
✓ O M FRASER	GPC	ACTING QA Site MANAGER
✓ G. A. GOODE	GPC	Supt. Plant Engineering
W B Gloersen	NRC	Radiation Specialist
Luis A. Reyes	NRC	Deputy Director, DRP
Roger D Walker	NRC	Director of Division of Reactor
FLOYD S CANTRELL JR	NRC	SECT CHIEF
Reta Holmes-Lang	NRC	~~SENIOR RES. INSP.~~
✓ C L Coggin	GPC	Manager General Support
✓ R W Zawadoski	GPC	Manager HP/Chem.
✓ S. C. EWALD	GPC	Manager Radiological Safety
G. M. NEITZEL	NRC	Resident Inspector

FOIA-87-76
D156

12/6/86

Floyd's
Draft

December 3, 1986

8:30 AM — First skimmer surge tank low level alarm received by Unit 1. Water added. No further action deemed necessary

11:30 AM — Second low level alarm received. Closed dump valve from fuel pool cooling system (FPC) to main condenser "hotwell" (suspected cause of low level alarm)

2:00 PM — Leak discovered at reactor building penetration on 112 foot elevation

2:30 PM — Third low level alarm received. FPC System valve alignment checked. No descrepancies identified. Search for problem continued on evening shift

9:37 PM — FPC pumps tripped - water level one foot below skimmer when operator reached ~~[illegible]~~. fuel pool

FOIA-87-76
D/57

10:00 PM

1/ Water entering Turbine building 112' elevation
2/ Water pouring on cable trays in turbine building 130' elev.
3/ Unable to open door to Nitrogen storage tank room due to water behind door

10:30 PM

1/ Fuel pool level estimated to be 4' below normal. Later (1:00 PM) measured to be 5.5' below normal.
2/ Low ~~oil~~ air pressure on transfer canal seal observed and corrected by opening air supply
3/ Shift supervisor forced open Nitrogen storage tank door revealing 2-3' of water and water exiting to storm drain

10:45 PM

Manager of Plant Operation notified and responds to site

10:55 PM

Fuel pool level returned to normal

DAILY STATUS REPORT — UNIT-1 — 12-6-86

MODE SWITCH: R/F S/D S/U (RUN)	MWTH 2206	MWE 745	PRESS 993

D/W	AVG TEMP	EQP DR LKG	FL DR LKG	CST LVL
	103 °F	2.0 GPM	.35 GPM	19.5 FT.

HW LVL	COND VAC	OFF GAS FLOW	PRE-TREAT RAD	K FACTOR
44"	27.5 IN.HG	24 SCFM	15,235 μci/sec	5.29

HEAT RATE	CORE FLOW	RX H_2O COND
10,130 BTU/KWH	68 10^6 lb/hr	.18 μmho

STATUS OF THE FOLLOWING ITEMS NEEDED EACH MONDAY AS OF 7:00 a.m.:

RIVER LVL (DAILY) 711.6 FT.

FUEL EXPOSURE NA MWD/T

RX COOLANT (Iodine) NA μ/ml
ACTIVITY (Copper) NA ppb

ACTIVE LCO'S

NUMBER	EQUIPMENT	NUMBER	EQUIPMENT
1-86-83	Fire Barriers		
1-86-446	Fire Barriers		

POWER CHANGES — Notify Lab of any power changes of >15% in one hour when made.

FROM	TO	TIME	FROM	TO	TIME	FROM	TO	TIME
812 MWE	720 MWE	0230						
720 MWE	745 MWE	0450						

UNIT NARRATIVE REPORT. To include major equipment out of service, operating problems, maintenance items needing corrective action, tentative plans, and any other general comments of interest on unit operation.

Maintaining Rated Thermal Power
Reduced Load To Perform Weekly Turbine Tests & Monthly CV Tests
"B" RWCU Pump Tripped For Unknown Reasons: Staff Investigating
Increasing Back To Rated Power

Hatch Duty Officer
G A Goode

PREPARED BY EB Enguhart

FOIA-87-76
D/58

DAILY STATUS REPORT

UNIT: HNP-II | DATE: 12-6-86

MODE SWITCH: R/F (S/D) S/U RUN | MWTH 0 | MWE 0 | PRESS 0

DW: AVG TEMP NA °F | EQP DR LKG NA GPM | FL DR LKG NA GPM | CST LVL 22 FT.

HW LVL 55" | COND VAC 0 IN HG | OFF GAS FLOW NA SCFM | PRE-TREAT RAD Dunsgle uci/sec | K FACTOR NA

HEAT RATE 0 BTU/KWH | CORE FLOW 26.5 10^6 lb/hr | RX H_2O COND .41 µmho

STATUS OF THE FOLLOWING ITEMS NEEDED EACH MONDAY AS OF 7:00 a.m.:

RIVER LVL (DAILY) FT.

FUEL EXPOSURE NA MWD/T | RX COOLANT ACTIVITY (Iodine) NA µ/ml (Copper) ppb

ACTIVE LCO'S

NUMBER	EQUIPMENT	NUMBER	EQUIPMENT
2-86-458	Fire Barriers		

POWER CHANGES: Notify Lab of any power changes of >15% in one hour when made.

FROM	TO	TIME	FROM	TO	TIME	FROM	TO	TIME

UNIT NARRATIVE REPORT: To include major equipment out of service, operating problems, maintenance items needing corrective action, tentative plans, and any other general comments of interest on unit operation.

Unit Startup Preparations In Progress

Hatch Duty Officer
GA Goode

PREPARED BY: EB Lindquist

December 5, 1986 Friday Day Shift
OSOS-Coleman U1SS-Tyer U2SS-Varnadore

Unit 1

- Maintaining 100% of RTP w/ 813 mWe
- RWCU reg. Hx has a bad stm. leak
leak repair to shoot it.

Unit 2

- Outage continues, all startup preparations have been completed.

11pm to 7am shift - Urquhart On Shift; Coleman Off.
(U1) PHWells; (U2) RSStone; (U1) CATyre 11pm to 7am

0000 Saturday 06 December 86...

Unit One

- On Line At 812 MWE / Maintaining Rated Thermal
- Leak Repair Inc. To Continue Work On RWCU Top Regen HX Steam Leak
- Shift To Perform Daily & Weekly Turbine Tests
- Shift Performing Weekly CRD Exercise Test
- Maint Resetting Fire Deluge Clapper Vlvs. That Tripped Yesterday
- I&C To Perform Main Turbine CV Closure Surv.
- Cleanup Activities Continue With Water Behind Cooling Towers

Unit Two

- Outage Continues; Shift Reviewing Startup Prerequisites
- Shift Personnel Continue Monitoring Of Circ. Water Flume Levels And Refuel Floor Canals, Seals & Air Pressures

U1 - 1B RWCU Pump Tripped For No Apparent Reason - Only Alarms Received Were "Pump Low Flow" & "Demin Failure"; Shift Investigating

Friday December 5, 1986 Unit One
Daylight On Duty Charlie A Tyre

▷ Reactor Status

GMWE: 812.4 CMWT: 2419
WT: 76.5

▷ Plant Status

° Cleanup operations at the yard drain discharge / swamp. All questions are to be directed to the Manager of this Group (C. Coggins) @ ext 2771.
° 24 hour monitoring is in effect on the R/F Floor to monitor fuel pool level per management request.
° 24 hour monitoring is in effect at the Unit 1 & Unit 2 Flume overflows. This is being done to prevent any overflow that would extend cleanup operations.
° R/W has been instructed to keep T/B Floor Drain sumps pumped down in anticipation of truck load of water from the cleanup operation at the swamp.
° "B" recirc scoop tube locked due to fluctuations in the speed control circuitry.
° "B" Loop of RHR in Torus cooling
° No abnormal alarms present.

0600 "B" Loop ~~of~~ Com 12/16/86 of LHR out of Torus Cooling & aligned to standby
0715 3460-OPS-033-1S "ECCS Status Check" Complete & sat
0718 34SV-H11-001-1 "Control Room Annunciator Check"

0718 complete & unsat... MWO's have been previously submitted on the annunciator that did not test properly.

0740 42SV-SUV-013-1 "Fire Hose Station - Safety Related Areas" in progress by Maint (S. Mosby)

0815 Inside rounds reports EHC reservoir level has decreased ~.3" since last night on the midnight shift. SS out of Control room to check.

0830 SS returned to Control room. The leak on EHC was located at a Coupling on the EHC Bypass Valve Isolation line. The leak is a steady drip and we have place a container to contain the leak. MWO has been submitted to have this repaired. We are also Checking Cond. Bay to ensure no EHC leaks present there.

▷ Per B.D. Coleman the following actions are to be implemented in Radwaste

- Prior to any discharges being made an Operations Supervisor will have to go to Radwaste and verify proper compliance with procedures ie Valve alignment, discharge permit.
- Radwaste status reports are to be completed twice/shift with this information going to the Opr representative in the TSC. This report should be delivered to the TSC @ 1100 and every 4 hours thereafter.

0920 Dry well O_2 @ 3.2% per Lab sample.

0925 34SV-R43-001-1S "Diesel Generator Manual Start" in progress as normal surveillance

1000 42SV-FPS-018-1N "Fire Barrier 18 Month Surveillance"

1000 in progress by Maint

1005 there were no leaks on the EHC system other than the one noted in the 0830 entry.

1230 34SV-R43-001-1S Complete & sat on the "A" diesel generator

1240 Shift recieved alarm on Cable spreading room, SS out to investigate

1300 Alarm on the F.P. Cable spreading room was not valid. The clapper valve had not actuated however the alarm indicated it was. MWO submitted

1345 57CP-CAL-036-1S "Stator "O" Ring Pressure Switch" in progress by I&C (S. Lawson)

1400 Shift has dispatched PEO to RWCU Hx / Pump room to investigate steam leak that has been reported to the Control room.

▷ MWO's written this shift

- 1Z43-N406BC Ion Detector inop fire protection
- 1T43-N406AR Ion Detector inop fire protection
- 1Z43-F307A Deluge Valve alarm
- 1N32-G001 EHC leak

1400 Properly relieved by J. W. Watts
Charles A Tyler

1405 EVENING SHIFT ON, FRIDAY 12-5-86 UNIT ONE, JW WATTS ON SHIFT. UNIT ON LINE AT 50% MWE MAINTAINING RATED POWER. MAINTAINING 24 HOUR/DAY WATCH OF SPENT FUEL POOL LEVEL AND CIRCULATING WATER FLUME LEVEL. 1B RECIRC PUMP SCOOP TUBE IS LOCKED TO PREVENT SPEED FLUCTUATIONS. MAINT AND LEAK REPAIR INC PERSONNEL PREPARING TO RAMP

12-5-86

LEAK IN RWCU HX ROOM. MAKING UP DEMIN WATER TO THE C.S.T.

1420 PEO REPORTED LEAK AT RWCU HX ROOM WAS FROM THE FLANGE AT THE EAST END OF THE TOP RE-GENERATIVE HEAT EXCHANGER.

1450 57CP-CAL-036-1S DISCONTINUED UNTIL LATER.

1520 34GO-OPS-033-1S (ECCS STATUS CHECKS) COMPLETE.

1525 34SV-H11-001-1S COMPLETE AND UNSAT DUE TO INW ALARMS.

1555 HAVE LEFT CONTROL ROOM IN ORDER TO COMPLY WITH SO-OPS-01-1286.

1635 RETURNED TO CONTROL - APPROVED DISCHARGE OF CHEM WASTE SAMPLE TANK. TOURED R/W BLDG AND 130' ELEVATION OF R BLDG

1705 LAB REPORTED DEMIN TRANSFER PUMP MAKING STRANGE, SHRILL, LOUD NOISE. FURTHER INVESTIGATION REVEALED NOISE COMING FROM THE INBOARD BEARINGS. MAINTENANCE HAS BEEN NOTIFIED TO CHECK THIS OUT. SECURED PUMP UNTIL MAINTENANCE ARRIVES.

1755 RELIEVED BY PETE WELLS

JW Watts

1755 Evening shift continues, as before.

1930 SS out of control room to perform SO-OPS-01-1286, unit 2 [illegible]

2000 Back in control room

2100 SS out of control room to perform SO-OPS-01-1286, unit 2 [illegible]

2135 SS Back in control room

2140 Relieved by C.N. Tyc [signature]

CNT
12/5/86

2200 Friday December 5, 1986 Unit One
Night shift on duty
Charles A Tyre

▷ Reactor Status
GMWE : 813 GMWT : 2418
WT : 76.64

▷ Plant Status
° Cleanup Recovery Group still active in the TSC
° 24 hour coverage provided on the refueling floor monitoring level of the fuel pool.
° 24 hour coverage provided at the flume overflow to prevent any overflow until cleanup recovery operations are complete. (2.5' below concrete apron)
° "B" recirc scoop tube is locked due to fluctuations in the speed control circuit.
° Shift working w/maint resetting fire protection clapper valves @ CSR & Reactor Bldg.
° No surveillances procedures in progress

▷ Maint Activities
° Leak repair is making preparations to "shot" the Region #4
° Maint Crew is working on resetting clapper valves
° I&C working on 1G31-R607 (Reactor water temperature indicator)

▷ Shift making up water to the CST from the DST
2230 34SV-H11-001-1 "C/R Annunciator Check" Complete & unsat. Mule's previously written on the alarms that did not test properly.

2245 34GO-OPS-033-1S "ECCS Status Check" Complete & Sat

2330 CST makeup has been stopped. CST level @ ~20'

0045 Received permission from the load dispatcher to reduce load for weekly turbine testing. We will reduce load to ~ 700 GMWE prior to starting tests. 57SV-C71-002-1 "Turbine Control Valve Fast Closure Instrument FT&C" in progress by I&C (R. Cooper.)

0100 When we entered the "B" Recirc MG Set Room, to manually reduce recirc pump speed, we found all the phones & pager broken. We tried communicating with hand held radios but transmissions were to poor quality. Maint notified and are repairing the phones now.

0228 Telephones in the "B" Recirc MG Set Room have been repaired. We are now continuing with our load reduction in preparation for weekly turbine testing.

0245 RWCU System tripped. The only alarm received was "pump low flow". There was no isolation or isolation signal alarming. Shift investigating now

0302 We could find no indication of a steam in the RWCU pump / Hx Area. We will restart the system once the TCV Testing is complete

0316 34SV-C11-003-1 "Control Rod Exercise > 30% Power" Complete & Sat as normal surveillance.

2SS

0600 DAYSHIFT OK FOR 12/5/86 FRIDAY ROGER CARMICHAEL WAITING ON MANAGEMENT APPROVAL TO PULL RODS.

0728 34SV-H11-001-2 (CR ANNUNCIATOR TEST) COMP/SUNSAT MWO'S SUBMITTED AGAINST INOP ALARMS

0730 34GO-OPS-033-2S (ECCS CHECKLIST) COMP/SAT

0733 57SV-S41-003-2 (WOODWARD RAMP GEN. HIGH/LOW) IP/S. LAWSON

0925 KEN SIMPSON PERFORMING 42SP-120486-QV-1-2N (FT FOR HEAT TRACING FOR NEW COOLING TOWERS 2P65-B004A&B PER DCR 86-205)

1030 42SP-120486-QV-1-2N COMPLETE AND SAT.

1030 RECEIVED NEW STANDING ORDERS SO-OPS-01-1286 (RADWASTE DISCHARGES) AND SO-OPS-02-1286 (PROCESSING OF WATER FROM YARD DRAINS).

1030 S.S. WAS OUT OF CONTROL ROOM ON PLANT TOUR SINCE 0930 TOURED SPILL CONTROL AREA BEHIND COOLING TOWERS.

1346 57SV-S41-003-2 COMP/SAT

1418 57SV-MAT-003-2S (MPCI LOGIC RELAY TIME RESPONSE TESTING) IP/R. BRADDY

1500 DR# 2-86-874 (2G41-F224) FILED

1507 FILLING OF MAIN GEN. WITH H^2 IP

1540 34SV-H11-001-2 (CR ANNUNCIATOR TEST) COMP/UNSAT MWO'S SUBMITTED AGAINST INOP ALARMS.

1541 34GO-OPS-033-2S (ECCS CHECKLIST) COMP/SAT

1600 34SV-T46-002-2 (SBGT OPER. DP'S) COMP/SAT

1745 ~~AA~~ 12/5/86 RELIEVED BY S. STOKE

ROGER CARMICHAEL

1800 Night Shift on: Friday, 12 [illegible], [illegible]
Unit Outage in Progress. Sweep Cleaning in Progress

2130 57SV-SHV-013-2S In Progress For FT&C On
2B21-N690A, C&E and 2B21-N641C

2254 57SV-SHV-013-2S Complete & Sat.

2321 345V-1411-001-2 Complete & Unsat Some Alarms
don't work when Tested MWO's written.

DECEMBER 8, 1986

HATCH 1 AND 2 - AIT FOR LEAK FROM SPENT FUEL POOL
DECEMBER 4, 1986, (E. WEISS, IE)

PROBLEM: 141,000 GALLONS LEAKED FROM SPENT FUEL POOL TRANSFER CANAL

CAUSES:

- AIR SUPPLY INADVERTENTLY SHUT TO INFLATABLE SEALS IN CANAL
- DRAINS ON LEAK DETECTOR INADVERTENTLY LEFT OPEN

SIGNIFICANCE:

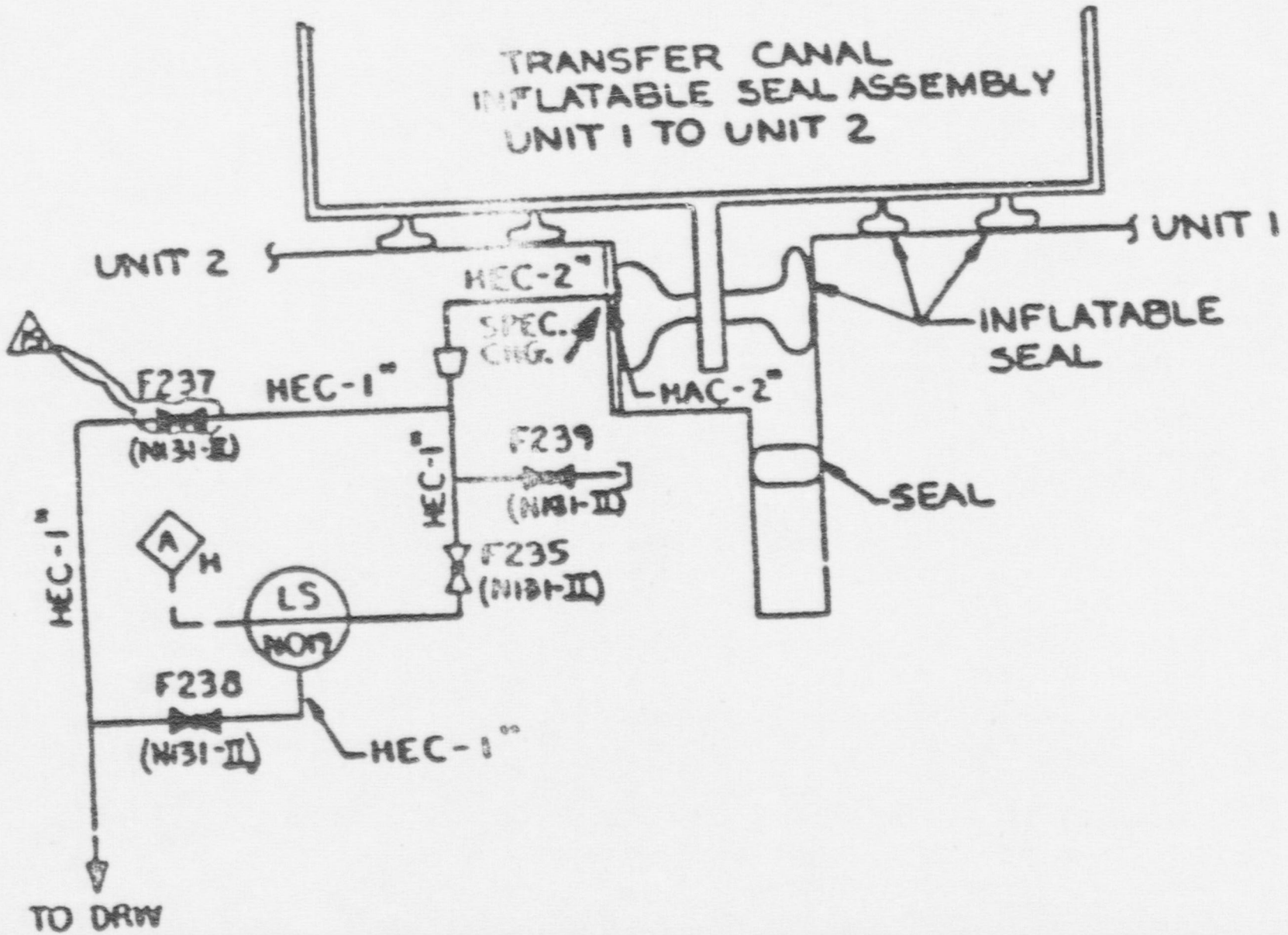
- LEAK NOT IDENTIFIED FOR HOURS (AIR SUPPLY SHUT 2200 CST DEC 2)
- LEAKAGE PATH TO ENVIRONMENT AND CAUSE NOT IMMEDIATELY APPARENT
- IF FUEL BUNDLE HAD BEEN IN TRANSIT, POTENTIAL FOR UNCOVERY EXISTS

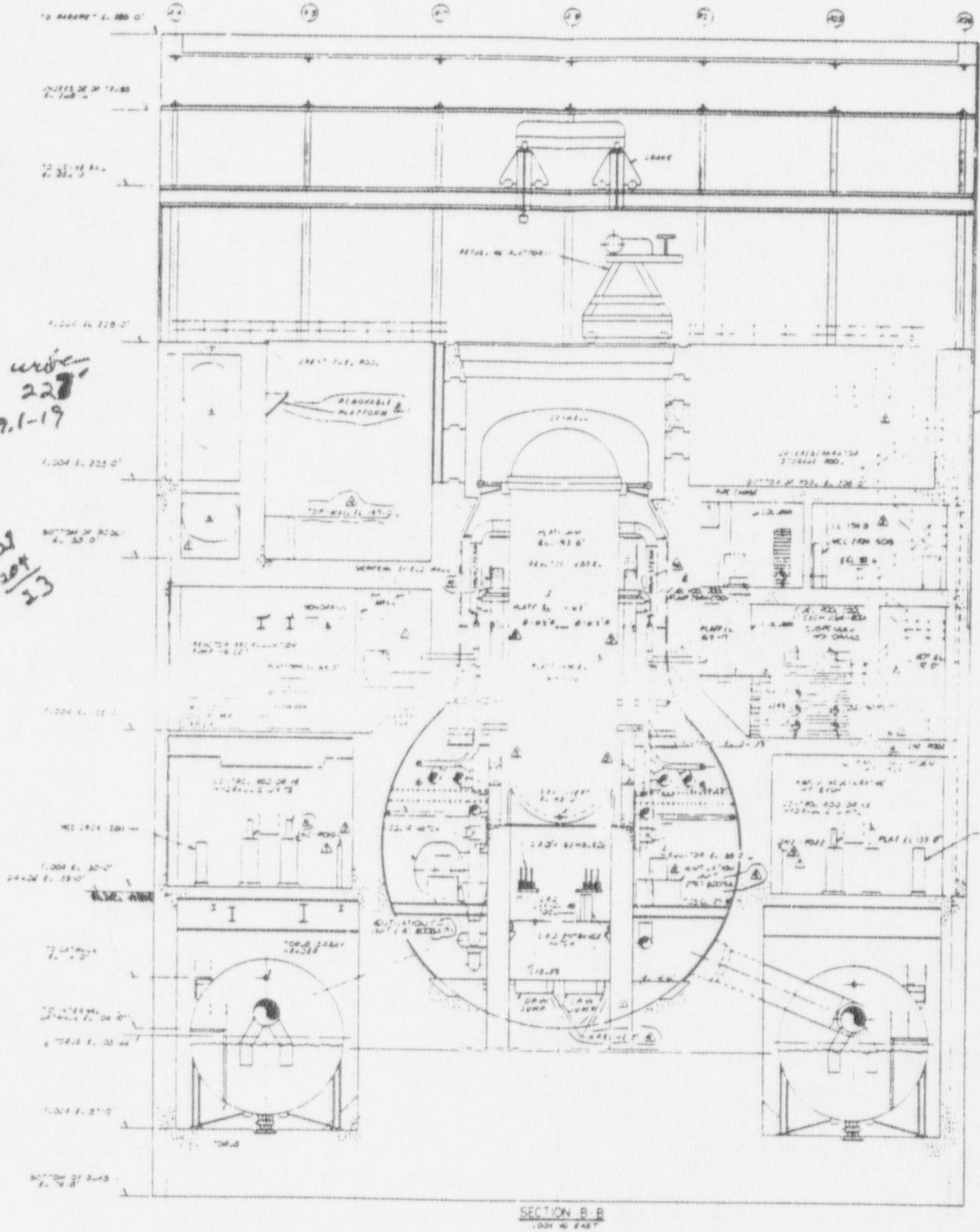
DISCUSSION:

- UNIT 1 AT 100% POWER THROUGHOUT EVENT; UNIT 2 SHUTDOWN
- TRANSFER CANAL SEAL IS INFLATED DURING REFUELING
- INFLATABLE SEAL IS USED IN GAP BETWEEN REACTOR BUILDINGS FOR SEISMIC CONSIDERATIONS
- DOUBLE INFLATABLE SEAL ON GATE IS IN PLACE DURING REACTOR OPERATION
- SEAL LEAK DETECTION DRAIN VALVES (F238 AND F239) LEFT OPEN PRIOR TO EVENT - SEAL LEAK DETECTION ALARM DID NOT WORK
- PROBLEM WITH PRESSURE REGULATOR; AIR VALVE THROTTLED
- AIR VALVE MOVED TO CLOSED POSITION WHILE RESTORING FROM CLEARANCES
- 1430 CST DEC 3, THIRD LOW LEVEL ALARM IN FUEL POOL
- 2200 CST DEC 3, COULD NOT OPEN DOOR TO NITROGEN ROOM, WATER POURING INTO CABLE TRAYS, LEAK FOUND
- LEVEL DOWN ABOUT 5 FEET
- ALARM ON SPENT FUEL POOL LEVEL WORKED
  - 17,000 GAL TO RAD WASTE
  - 40,000 GAL CONTAINED BETWEEN REACTOR BUILDINGS
  - 84,000 GAL TO STORM DRAIN AND SWAMP
- 1.26 X MPC CS-134, CS-137, ZN-65, CO-60, MN-54
- DIKES BUILT FROM OUTFALL TO SWAMP
- RIVER RISING BECAUSE OF RECENT RAINFALL
- TANKER TRUCKS USED TO REMOVE WATER
- CLEANUP OF WATER BY RECIRCING THRU DEMINS TO TANK TRUCK

FOLLOWUP:

- HATCH AIT SCOPE IS TO DETERMINE
  - ROOT CAUSES OF EVENT AND FAILURE OF ALARM
  - DETERMINE AMOUNT OF SPILL AND RELEASE
  - LICENSEE RESPONSE TO IEB 84-03 AND IN 84-93
  - POTENTIAL RISK IN DRAINING BOTH POOLS
  - POTENTIAL FOR LOSS OF SECONDARY CONTAINMENT
  - LICENSEE'S KNOWLEDGE OF PRECURSOR EVENTS
- PRELIMINARY OBSERVATIONS BY AIT RELATE TO:
  - ADMIN CONTROLS FOR PRESSURE REGULATOR AND LACK OF DEFICIENCY REPORT
  - CLOSING OF AIR SUPPLY VALVE WITHOUT PROCEDURE
  - PROCEDURE TO CALIBRATE LEAK DETECTION
  - PROCEDURE TO CHECK AIR PRESSURE DID NOT INCLUDE TRANSFER CANAL SEALS
  - AIR SUPPLY TO SEALS NOT REDUNDANT
- IE CONSIDERING INFORMATION NOTICE IF CONFIGURATION IS NOT UNIQUE


TRANSFER CANAL
INFLATABLE SEAL ASSEMBLY
UNIT 1 TO UNIT 2
UNIT 2
UNIT 1
HEC-2"
SPEC. CHG.
INFLATABLE SEAL
HAC-2"
F237
HEC-1"
(N131-II)
F239
(N131-II)
SEAL
HEC-1"
HEC-1"
A
H
L
LS
F235
(N131-II)
F238
(N131-II)
HEC-1"
TO DRW

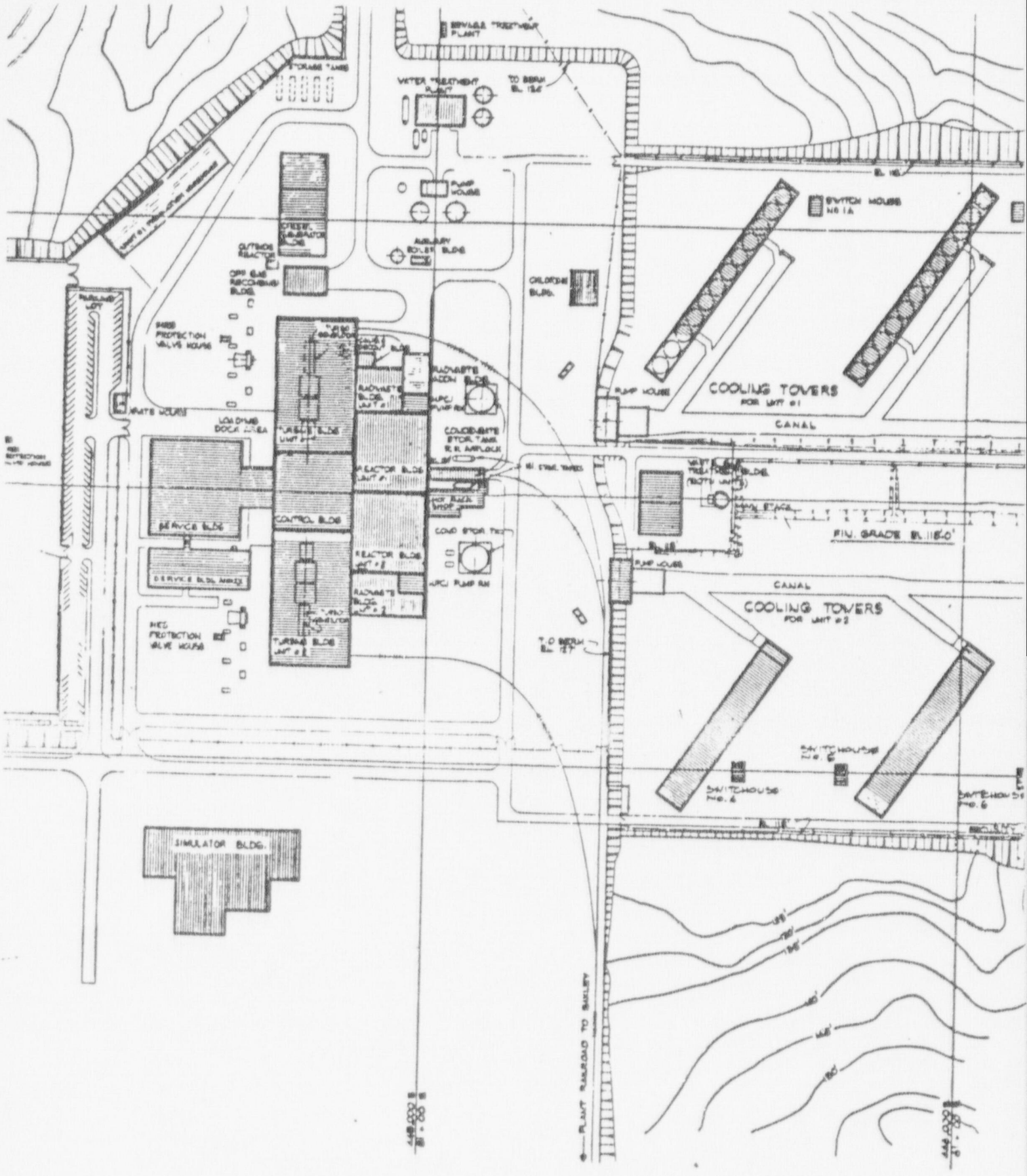


SECTION B-B

normal water level 227'
page 9.1-19

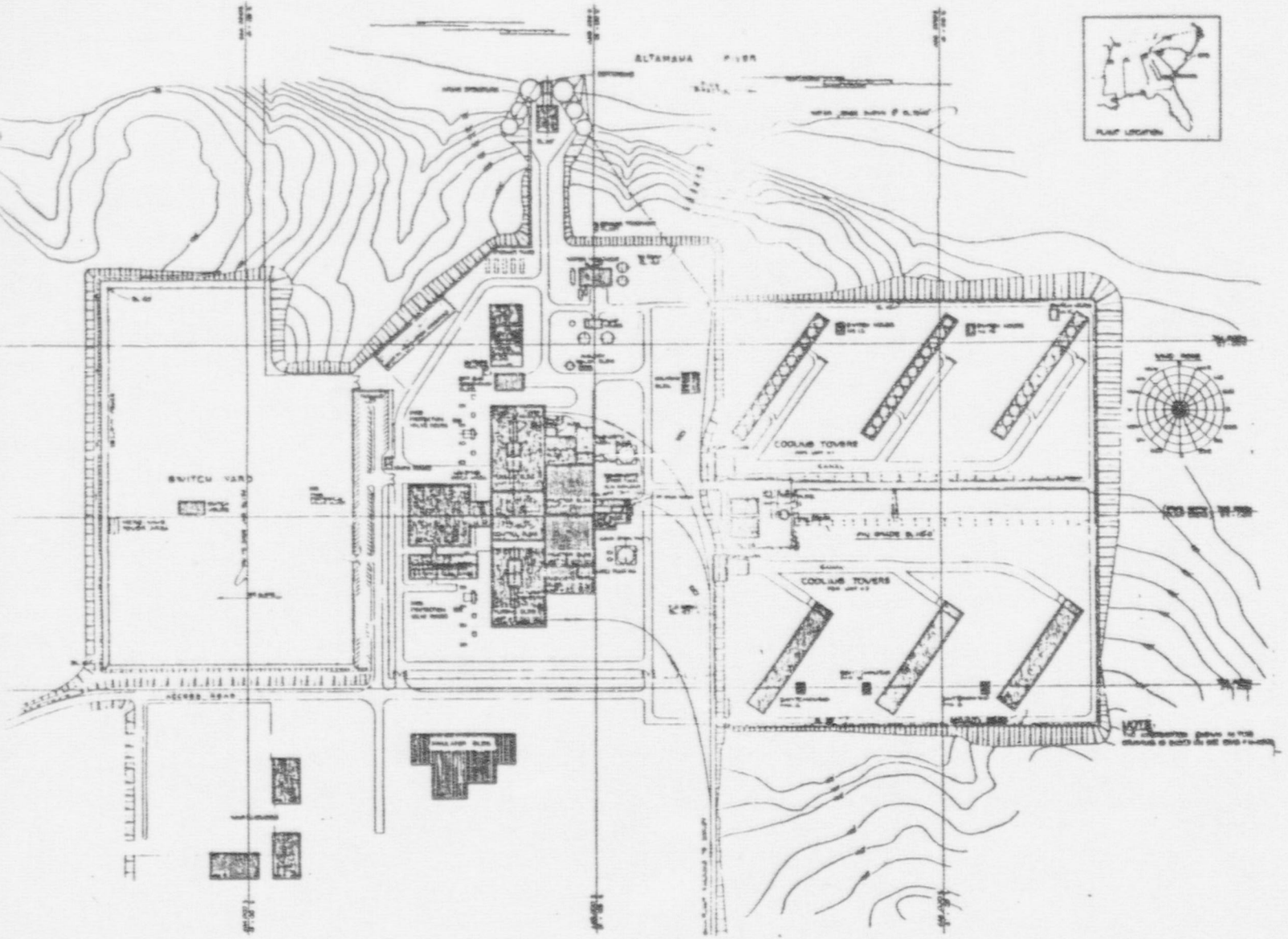
227 - 189 = 38
227 - 204 = 23

FUEL TRANSFER CANAL BOTTOM 203' 9"



Georgia Power

EDWIN I. HATCH



Georgia Power

EDWIN I. HATCH
NUCLEAR PLANT - UNIT 2

HATCH STRUCTUI
ARRANGEMEI

FIGURE

DOCKET: 50-321
50-366

REN: 07101

X

HQ DUTY OFFICER
SECURITY COMPUTER FAILURE

X

HARRIS
DN: 50-400

BATCH 1, 2
DOCKET: 50-321
50-366

RESIDENT INSPECTOR
HATCH RELEASE UPDATE
REN: 07091 AND 07093

COURT HOUSE HAD A PROBLEM WHICH IS CAUSING THE PUBLIC PROMPT NOTIFICATION SIRENS IN ALABAMA TOWNS OF ASHFORD, GORDON, AND COLUMBIA TO BE INOPERABLE. UTILITY PERSONNEL HAVE BEEN DISPATCHED TO TROUBLESHOOT PROBLEM. ROUTINE FOLLOWUP.

ON DECEMBER 3, 1986, AT 9:38 P.M., THE SECURITY COMPUTERS AT SHEARON HARRIS FAILED, CAUSING THE LOSS OF ALARM PROCESSING IN BOTH ALARM STATIONS. COMPENSATORY MEASURES WERE IMPLEMENTED. THE COMPUTER WAS BROUGHT BACK ON LINE AT 9:56 P.M. A REGIONAL INSPECTOR IS ONSITE.

WATER LOSS FROM THE UNIT 1 AND UNIT 2 SPENT FUEL POOLS WAS RECALCULATED TO BE ABOUT 141,000 GALLONS INSTEAD OF THE 50,000 THAT WAS REPORTED EARLIER. THIS UPDATED NUMBER INCLUDES ALL WATER ADDED TO THE POOLS SINCE 12/2 AS DETERMINED FROM THE LOG REVIEWS. THE DROP IN FUEL POOL LEVEL WAS ABOUT FIVE AND ONE HALF FEET WHICH IS BELOW THE UNIT 2 TECHNICAL SPECIFICATIONS REQUIRED LEVEL OF 23 FEET ABOVE THE TOP OF STORED FUEL (UNIT 1 T.S. REQUIRED LEVEL IS 8.5 FEET ABOVE STORED FUEL). THE LEAKAGE WAS DUE TO A LOSS OF AIR TO INFLATABLE SEALS IN THE TRANSFER CANAL SEISMIC GAP RATHER THAN THE CANAL GATES AS PREVIOUSLY THOUGHT. THE ACTION REQUIRED BY U-2 T.S. WAS TO SUSPEND FUEL MOVEMENT AND CRANE OPERATIONS WITH LOADS IN THE SPENT FUEL STORAGE POOL AREA. NO VIOLATIONS HAVE BEEN IDENTIFIED RESULTING FROM LEVEL LOSS. OF THE 141,000, 17,000 GALLONS WAS CAPTURED IN THE RAD WASTE HOLDING TANKS, ESTIMATED 40,000 GALLONS MAY STILL BE IN THE JOINT BETWEEN THE REACTOR BUILDING BELOW THE 112 FOOT ELEVATION AND THE REMAINDER, ABOUT 84,000 GALLONS DRAINED TO THE SWAMP AREA. DURING LATE AFTERNOON AND NIGHT OF 12/4/86 THE SOURCES OF NON-CONTAMINATED WATER WERE DIVERTED FROM DRAINING INTO THE SWAMP. ALSO THE FLOW FROM THE CONTAMINATED DRAIN HAS ESSENTIALLY STOPPED. THEREFORE ADDITION OF WATER TO THE SWAMP IS FROM CLEAN GROUND WATER SEAPAGE. OVERNIGHT, EFFORTS TO VERIFY CONTAINMENT OF SWAMP WATER DISCLOSED A FLOW PATH FROM THE NORTH PORTION OF THE SWAMP TO THE RIVER. SAMPLES TAKEN BY LICENSEE AND STATE PERSONNEL VERIFIED NO CONTAMINATION IN THIS FLOW PATH. THE ORIGIN OF THIS FLOW PATH IS OUT SIDE THE CONTAMINATED PORTION OF THE SWAMP. THE FLOW PATH WAS FILLED WITH DIRT AND THE FLOW HALTED. NO MIGRATION OF CONTAMINATION OCCURRED OVERNIGHT. THE RIVER LEVEL INCREASED ABOUT 1.25 FEET FROM 12/4 TO 12/5/86. THE BANK HEIGHT IS CURRENTLY ABOUT 2.5 FEET. ALTHOUGH NO EMERGENCY CONDITION HAS BEEN DECLARED THE TECHNICAL SUPPORT CENTER HAS BEEN MANNED AND RECOVERY EFFORT IS BEING COORDINATED FROM THERE. THE PRESIDENT OF GEORGIA POWER COMPANY AND MEMBERS OF HIS STAFF ARE ON SITE MONITORING THE RECOVERY EFFORT. THE SOURCE OF THE LEAK WAS FROM LOSS OF AIR TO THE INFLATABLE SEALS (6) ON THE SEAL BETWEEN REACTOR BUILDINGS ONE AND TWO. THE GAP BETWEEN THE BUILDINGS IS ABOUT THREE AND ONE HALF INCHES. AS AN IMMEDIATE CORRECTIVE ACTION THE LICENSEE DIVIDED THE SINGLE AIR SUPPLY TO THIS SEAL SUCH THAT THE OUTBOARD SEALS ARE SUPPLIED FROM A DIFFERENT SOURCE THAN THE INBOARD SEALS. UPON DISCOVERY OF THE LEAKS, PLANNED FUEL MOVEMENT WAS STOPPED

2

1/ Taylor

E Weiss work toward IN

3

Licensee/Facility	Notification/Subject
Haddam Neck DN 50-213	12/8 SRI PC Extension of 11/30 Plant Shutdown

Event

After the 11/30 plant trip due to maintenance error, and subsequent replacement of a leaking valve stem leak-off line for the loop 1 cold leg isolation valve, plant start up began on 12/5. On 12/7, abnormal vibration in a main turbine main steam reheater (MSR) was caused by loose baffle plates in the MSR. The plant will remain offline, with the reactor critical, for 2-3 more days to repair this MSR and inspect the other three. The resident inspectors are following licensee actions.

MORNING REPORT - REGION II
DATE: DECEMBER 8, 1986

LICENSEE/FACILITY	NOTIFICATION/SUBJECT	DESCRIPTION OF ITEM OR EVENT
HATCH 1, 2 DNS: 50-321 50-366	RESIDENT INSPECTOR HATCH RELEASE OF 12/4 UPDATE REN: 07091 AND 07093	CLEANUP OF CONTAMINATED NORMALLY CLEAN AREAS INSIDE THE PLANT ARE ESSENTIALLY COMPLETE, EXCEPT FOR THE NITROGEN STORAGE AREA (SAMPLES INDICATE THAT 25-35% OF THE ESTIMATED .37 CI RELEASED FROM THE SPENT FUEL POOLS ARE RETAINED IN THIS AREA). A ROOF HAS BEEN ERECTED OVER THIS AREA TO KEEP OUT RAIN WATER. THE HOT MACHINE SHOP IS ADJACENT TO THE N2 STORAGE AREA AND WAS THE PATHWAY FOR WATER TO REACH THE STORM DRAIN OUTSIDE THE HOT MACHINE SHOP DOOR. THIS STORM DRAIN LEADS TO THE OUTFALL AND SUBSEQUENTLY TO THE SWAMP AREA. CLEANUP OF SEDIMENT AND DECONTAMINATION IS IN PROGRESS. ALL SOURCES OF WATER FROM THE PLANT TO THE SWAMP HAVE BEEN DIVERTED AT OR PRIOR TO REACHING THE OUTFALL. THE CONTAMINATED WATER IS BEING COLLECTED AND IS CURRENTLY 4% MPC. (SAMPLES TAKEN 8:00 A.M. 12/04 WERE 1.15 MPC). CLEAN UP IS IN PROGRESS BETWEEN THE OUTFALL AND THE SWAMP. IN EXCESS OF 200 CUBIC FEET OF CONTAMINATED SAND, ROOTS, ROCKS, ETC. HAVE BEEN REMOVED. PLANS ARE TO REMOVE VEGETATION, SAND AND SEDIMENT IN THE CREEK BED TO REDUCE CONTACT READING TO LESS THAN ONE HALF MR/HR. AND COVER WITH 6 INCHES GRAVEL. THIS WORK IS EXPECTED TO BE COMPLETE 12/08 PRIOR TO PREDICTED RAIN 12/08 OR 12/09. A COMPOSITE SAMPLER WILL BE SET UP AT THE OUTFALL TO MONITOR ACTIVITY DISCHARGED TO THE SWAMP WHEN RAIN STARTS. TWO COMPOSITE SAMPLERS HAVE BEEN SETUP BETWEEN THE SWAMP AND THE RIVER TO SAMPLE EXPECTED RUNOFF. NO CONTAMINATED DISCHARGES TO THE RIVER HAVE OCCURRED AT THIS TIME. 50,000-60,000 GALLONS OF WATER COLLECTED FROM THE VARIOUS DRAINS, DYKES, ETC. HAVE BEEN PROCESSED THRU RADWASTE. THERE HAVE BEEN NO DIRECT DISCHARGES TO THE RIVER. SECONDARY CONTAINMENT WHICH INCLUDED THE REFUELING FLOOR WAS DEMONSTRATED 12/5. IN THE NORMAL CONFIGURATION, THE FIXED SEAL BETWEEN THE TWO REACTOR BUILDINGS IS EXPOSED TO THE ATMOSPHERE OF THE REFUELING FLOOR AND ANY AIR LEAKAGE IS A PART OF THE LEAKAGE THAT IS MEASURED WHEN SECONDARY CONTAINMENT IS DEMONSTRATED. THE REFUELING FLOOR IS A PART OF UNIT 1 SECONDARY CONTAINMENT. THE DIRECTOR AND DEPUTY DIRECTOR REACTOR PROJECTS JOINED THE AIT AT THE SITE 12/6 AND CONCURRED IN PLAN TO RESTART UNIT 2. (UNIT 2 WAS MADE CRITICAL 3:00 A.M. 12/7/86.) THE AIT CONCLUDED 12/7.
SEQUOYAH 2	HQ DUTY OFFICER, 12/7	ON 12/7, AT 9:20 A.M., UNIT 2 RECEIVED A CONTAINMENT VENTILATION

TO: JIM O'REILLY
TOM BECKHAM
PLEASE CALL DAVE ALTMAN x7475

NEWS

Public Citizen

Congress Watch • Critical Mass Energy Project • Health Research Group • Litigation Group • Tax Reform Group

For Release: Noon - Monday
December 8, 1986

Contact: Joshua Gordon
202-546-4996

Press Advisory

WORST EVER NUCLEAR WASTE STORAGE ACCIDENT OCCURS IN GEORGIA

141,000 GALLONS OF RADIOACTIVE WATER LEAK FROM FUEL STORAGE TANK

PUBLIC CITIZEN WARNS THAT FUTURE ACCIDENTS ARE LIKELY

(Washington, D.C.) The Edwin I. Hatch nuclear power plant near Baxley, Georgia has experienced what is apparently the worst accident at a temporary storage facility for high-level radioactive wastes in the history of U.S. commercial nuclear power.

Approximately 141,000 gallons of radioactive water leaked out of storage pools containing spent nuclear fuel rods from the plant. (The highly radioactive fuel rods must be submerged in water in temporary storage pools on site because no permanent waste disposal facility exists in the United States to handle "high-level" nuclear wastes.)

About 84,000 gallons of the water passed through storm drains into a wetlands area located on plant property near the Altamaha River. It remains unclear how much radioactivity reached the river and how serious a health threat it poses.

Notwithstanding the seriousness of the accident, the plant's owner -- the Georgia Power Company -- has downplayed the incident and left numerous questions unanswered. These include how much radioactivity was actually released and why Georgia Power continued to operate the waste pool with malfunctioning safety equipment.

FOIA-87-76
D/61

The leak was discovered Wednesday, December 3, 1986 at 11:30 a.m. The radioactive water, however, continued leaking out from the spent fuel storage pool for over eleven hours and water levels in the pool eventually dropped five feet.

The accident occurred when several safety systems, including the leak detector alarm system, failed. This led to a series of events earlier deemed highly unlikely, if not impossible, by the Nuclear Regulatory Commission (NRC). It also appears that Georgia Power had failed to repair a key safety valve it previously knew to be broken; this failure, along with operator error, caused the leak.

(See enclosed fact sheet for further details.)

Following the accident, Georgia Power issued a press statement claiming that only 5,000 gallons of water had leaked and assuring the public that the accident posed no health threat. The utility's statement failed to describe the details of the accident.

Joshua Gordon, a nuclear policy analyst with Public Citizen's Critical Mass Energy Project, condemned Georgia Power's failure to give a full accounting of the circumstances and seriousness of the mishap. "Georgia Power has been less than candid with the public. Even NRC officials acknowledge that this is probably the worst accident involving a waste storage pool that they are aware of."

"One can expect this sort of accident to occur with increasing frequency as nuclear wastes pile up at nuclear reactors around the country," added Ken Bossong, director of Public Citizen's Critical Mass Energy Project. "And with each accident, there is the risk of contaminating water supplies, soil, and the air."

"There are high-level radioactive waste storage facilities at over 60 nuclear power plant sites in the United States; many of these

are already filled to capacity and need to be 'reracked' to accomodate even more wastes," noted Bossong. "Moreover, as this accident highlights, safety precautions for spent fuel storage are, at best, inadequate.

"There is no known method for safely and permanently storing these wastes so these waste pools may become de facto permanent waste dumps," warned Gordon. "The only way to lessen the risk of further accidents like this one -- or worse -- is to stop producing the wastes by phasing out our use of nuclear power."

The accident is the latest in a series of mishaps at the Hatch facility. A study issued earlier this year by Public Citizen revealed that the two Hatch reactors experienced 149 mishaps during 1984 and 1985. The study further noted that the NRC had rated Georgia Power's management of the Hatch facility the fourteenth worst in the country. (See enclosed fact sheet for further details.)

"Coupled with this most recent accident, these findings bring into question Georgia Power's competence to operate not just the Hatch reactors but also the Vogtle nuclear plants now under construction near Waynesboro," claimed Bossong.

Based on another study it issued in October, Public Citizen called upon Georgia Power to close the Hatch reactors and cancel the Vogtle plants now under construction. "This could be done without disrupting electrical service since there is a vast surplus of electricity in the Southeast," according to Joseph Kriesberg, an energy policy analyst with Public Citizen.

* *

Public Citizen is a non-profit research and advocacy organization founded in 1971 by Ralph Nader to address a broad range of consumer and environmental issues. The Critical Mass Energy Project is the energy policy arm of Public Citizen.

FACT SHEET ON HATCH NUCLEAR POWER PLANT ACCIDENT

On Wednesday, December 3, at about 11:30 am, an alarm at the Hatch nuclear power plant went off indicating that the fuel pool, where spent nuclear fuel rods are stored, needed additional water. Throughout the day, operators added "make-up" water to the spent fuel pool to maintain the proper water level, and to adequately cover the hot, radioactive spent fuel rods.

Eleven hours later, at about 10:30 pm, another alarm went off indicating that the amount of "make-up" water necessary was so much that something was probably very wrong. In that 11 hour period, 141,000 gallons of radioactive water leaked out of the spent fuel pool. The water level in the pool dropped at least five feet.

There are several times as much radioactivity stored in the Hatch fuel pool -- essentially a high level nuclear waste dump in Georgia -- than there is in the reactor itself. There is no containment structure around the fuel pool: the building is standard industrial strength.

Spent fuel rods are stored in the spent fuel pool on the site of every nuclear power plant because there is no permanent high-level nuclear waste disposal facility anywhere in the U.S. Currently the Hatch plant has 1580 spent fuel rods stored in its spent fuel pools. If all the water leaked out of the pools, an extremely serious accident could result.

The spent fuel rods are surrounded by water in order to dissipate the heat given off by the spent rods. The rods are separated by tubes made of radiation-absorbing materials to prevent a run a way nuclear reaction. In the event of water loss from the pool, the heat build-up could lead to the rupture of the fuel pool and could initiate an uncontrolled nuclear reaction. Long-lived highly radioactive elements could be released.

According to the Nuclear Regulatory Commission (NRC), of the 141,000 gallons of radioactive water that was released, 17,000 gallons were collected in the radioactive waste system. 40,000 more gallons of radioactive water drained into a thin alley between two buildings on site. The remaining 84,000 gallons leaked into the ground surrounding the plant.

On Friday afternoon, December 5, Georgia Power was still claiming that only 5,000 gallons of water had leaked out.

It is not clear exactly how much radiation was in the water that leaked out of the spent fuel pool. According to the NRC however, there was at least one area in which the radiation was highly dangerous.

During the accident, unit 1 was running at 100% power, but unit 2 was turned off for refueling, which had just been completed. During refueling, the used fuel rods are removed and replaced by fresh ones. The spent fuel rods are more highly radioactive than new ones, and contain the most dangerous radiation just after they are taken out of the reactor.

In addition, unit 2's operation had been restricted because the fuel rods just taken out of the unit 2 reactor had been leaking radioactivity into the plant for several months prior to the refueling. Some of this leaking radioactivity was probably in the water in the

The leak occurred because a series of three inflatable seals became deflated. Valves which control the air flow to the inflatable seals are supposed to be controlled by automatic regulators. However, the regulators had been broken for some time. Thus, to control the air flow, operators had been opening and closing the control valves manually, at intervals, by guess-work.

Federal nuclear inspectors believe that this manually operated regulator valve had been left-half open by workers seeking to regulate the air flow. However, no one had "tagged" the valve (i.e. provided an indication that it was left half-open purposely). According to the NRC, probably "some one saw it [halfway] open and closed it."

Closing the valve caused the three seals to lose air pressure and the water to leak out of the spent fuel pool.

The three seals had just the one common air supply, providing the seals with no backup systems. Georgia Power promised on Friday that it would repair the problem by installing separate sources of air for each of the seals, but did not indicate when that work would be completed.

Another factor in the accident was that the alarm system, which should have alerted operators to the leak, failed to work. The alarm system is designed to indicate when water is being lost from the fuel pool.

However, shortly before the accident, workers had been testing this alarm system. The testing required that a series of valves be changed from their operating position. The tests indicated that the alarm worked, but workers failed to return the valves to their proper operating positions.

This mistake was probably caused, according to the NRC, because somebody had written the wrong number in the wrong box on the paperwork used during the testing.

According to an NRC spokesperson in Atlanta, the accident raises several serious concerns for Georgia Power's operation of the Hatch nuclear power plant:

1. operating and testing procedures were not adequate or were not properly followed;

2. the seal system had never been properly or fully analyzed, and could not cope with a "common failure" of all three seals;

3. a failure of the seals opens the question that the system can not "adequately maintain secondary containment integrity."

4. the entire seal system may be inadequate.

According to an NRC spokesperson in Washington, the NRC doesn't "know of any [spent fuel pool] leaking this much water," thus making it the worst such known accident. However, Georgia Power apparently is not seriously concerned about the accident because the radioactive water that may have gone into the Altamaha river is "not close to levels [of radioactivity] we put into the river now" on a regular basis.

p 6

BACKGROUND INFORMATION ON THE HATCH NUCLEAR POWER PLANT

The Hatch nuclear power plant consists of two reactors built by General Electric and owned and operated by Georgia Power Company. The Hatch reactors are located about 30 miles west of Savannah, Georgia on the Altamaha River. Over 300,000 people live within 50 miles of the plant, many down river.

In August 1986, Public Citizen released its 1984-1985 Nuclear Power Safety Report revealing numerous safety shortcomings at the Hatch nuclear power plant.

Hatch unit one began operation in December 1975; unit 2 in September, 1979. Unit 1 is rated at 777 megawatts and unit 2 at 784 megawats when running at 100% power. However, Unit 1 has a lifetime capacity factor (i.e. the amount of power produced compared to the capacity of the reactor) of only 54 percent. Unit 2's capacity factor is just 58 percent. This means on average Unit 1 produces about 418 megawatts and Unit 2 produces about 454 megawatts.

According to Public Citizen's report, the NRC has given a low overall management rating to Georgia Power. In it's periodic Systematic Assessment of Licensee Performance (SALP), a general measure of management performance, Nuclear Regulatory Commission (NRC) statistics scored Hatch the 14th worst among the 67 plant sites in the country.

The Hatch nuclear power plant has experienced numerous problems and mishaps. Georgia Power reported 84 mishaps at Hatch to the NRC in 1985, up from 65 in 1984. In 1985, Unit 1 was among the worst 20 nuclear power reactors in the country based on the number of mishaps reported. In addition, the Hatch plants together experienced 26 scrams (i.e. emergency plant shutdowns) in 1985, making them the 15th worst in the country.

In February 1984, Hatch unit 2 workers discovered a condition that regulators considered one of the most serious nuclear "events" of the year. Cracks were discovered in the containment system, calling into question the ability of the plant to contain the massive amounts of radiation that could be produced in a nuclear core accident.

This is particularly significant because Hatch, like the 28 other General Electric plants in the country, has a "pressure suppression" containment system, similar in many respects to the ill-fated Chernobyl reactor. The NRC has predicted that there is as much as a 45% chance of a sever core melt accident in the next 20 years.

The Hatch plant regularly releases radiation which poses a serious threat to the health and safety of Georgia citizens. In 1984 4,110 employees at the Hatch nuclear power plant were exposed to radiation. On December 5, 1986, a Georgia Power spokesperson admitted that its nuclear power plant releases radiation into the Altamaha river regularly.

Currently there are 1580 spent fuel rods stored on the Hatch site because there is no permanent waste disposal facility. These spent rods contain several times as much long-lived radiation as is in the reactor itself. Thus, the Hatch plant is, in effect, a high-level nuclear waste dump. If Georgia Power completes the planned Vogtle plant, a second high-level nuclear waste dump will be created in Georgia.

STATEMENT BY GEORGIA POWER IN RESPONSE TO PUBLIC CITIZEN'S NEWS RELEASE

Public Citizen is an antinuclear organization, dedicated to shutting down every nuclear plant in the country...so their attempt to unnecessarily alarm the public is not surprising. The people of Georgia know the facts. Georgia Power acknowledged that a mistake was made, and moved quickly to correct the problem. There was never a threat to the safety of employees or the general public, There was no harm to the environment, and the plant continues to operate normally.

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DC-HATCH 12-8

GA

WASHINGTON (UPI) -- AN ANTI-NUCLEAR GROUP CHARGED MONDAY THAT A GEORGIA POWER COMPANY HAS DOWNPLAYED THE SIGNIFICANCE OF A LEAK OF RADIOACTIVE WATER FROM A WASTE STORAGE AREA AT ONE OF ITS NUCLEAR PLANTS.

PUBLIC CITIZEN'S CRITICAL MASS ENERGY PROJECT; A RALPH NADER CONSUMER GROUP; SAID IT CONSIDERS THE DEC. 3 LEAK AT THE EDWIN I. HATCH NUCLEAR PLANT NEAR BAXLEY; GA.; THE WORST ACCIDENT EVER AT ANY OF THE NATION'S TEMPORARY HIGH-LEVEL RADIOACTIVE WASTE STORAGE FACILITIES.

(This same story also ran at 8:50.)

GORDON VAN NOL; A SPOKESMAN FOR GEORGIA POWER; DENIED THE GROUP'S CHARGES.

"GEORGIA POWER ACKNOWLEDGED THAT A MISTAKE WAS MADE AND MOVED QUICKLY TO CORRECT THE PROBLEM;" HE SAID. "THERE WAS NEVER A THREAT TO THE SAFETY OF EMPLOYEES OR THE GENERAL PUBLIC. THERE WAS NO HARM TO THE ENVIRONMENT; AND THE PLANT CONTINUES TO OPERATE NORMALLY."

HE DESCRIBED THE GROUP AS "AN ANTI-NUCLEAR ORGANIZATION DEDICATED TO SHUTTING DOWN EVERY NUCLEAR PLANT IN THE COUNTRY; SO THEIR ATTEMPT TO UNNECESSARILY ALARM THE PUBLIC IS NOT SURPRISING."

THE UTILITY REPORTED THE LEAK OF ABOUT 100;000 GALLONS OF

CONTAMINATED WATER.

CRITICAL MASS SAID ABOUT 141,000 GALLONS OF RADIOACTIVE WATER ACTUALLY LEAKED FROM THE STORAGE POOLS THAT HOLD SPENT NUCLEAR FUEL RODS. THE GROUP SAID 84,000 GALLONS FLOWED INTO WETLANDS ON PLANT PROPERTY NEAR THE ALTAMAHA RIVER; BUT THERE WAS NO ESTIMATE OF HOW MUCH RADIOACTIVITY REACHED THE RIVER AND HOW SERIOUS A HEALTH THREAT IT POSED.

JOSHUA GORDON; A NUCLEAR POLICY ANALYST WITH THE GROUP; ACCUSED THE UTILITY OF BEING ''LESS THAN CANDID WITH THE PUBLIC'', BECAUSE OF ITS FAILURE TO DESCRIBE DETAILS OF THE ACCIDENT.

GORDON SAID FEDERAL INVESTIGATORS INDICATED THE ACCIDENT WAS CAUSED BY FAULTY CONTROL VALVES AND SEALS AND ALSO CITED AN ALARM SYSTEM FAILURE.

BUT VAN NOL DISPUTED THE GROUP'S DESCRIPTION OF EVENTS PRECEDING THE LEAK; SAYING INSTEAD; ''A PRESSURE REGULATOR WAS OUT OF SERVICE; AND WE USED A VALVE TO REGULATE AIR PRESSURE.

''WE'VE ALREADY SAID WHAT THE PROBLEM WAS;'' HE ADDED. ''WE SAID WHAT WAS WRONG AND IT WAS BEEN ON THE RECORD FOR THREE DAYS. THEY (CRITICAL MASS) THINK THEY HAVE SOME NEW INFORMATION AND THEY ARE TRYING TO MAKE IT LIKE WE WITHHELD INFORMATION.''

UPI 12-08-86 06:00PES

Interoffice Correspondence Georgia Power

LR-VPH-014-1286
Date: December 8, 1986

Re: PLANT E. I. HATCH
Long Term Recovery Program

From: J. T. Beckham, Jr.

To: D. S. Read
H. C. Nix
P. R. Bemis
S. B. Tipps
R. Hayes
R. W. Zavadoski
G. A. Goode
S. C. Ewald

Purpose: Provide a long term recovery program from the transfer canal seal failure. This letter fulfills the requirements of AG-MGR-05-0384.

Organization: The recovery organization will consist of an Overview Board directing the activities of four groups: Report Development, Investigation, Support and the Mitigating/Clean-up groups. Attachment 1 shows a functional diagram of this organization.

Responsibilities: Responsibilities are assigned as follows:

1. The Vice President (VP) Plant Hatch will be responsible for the overall recovery program. In addition, the VP will direct the on-site Public Information activities.

2. Overview Board will be responsible for assisting the VP in evaluating the corrective actions. They will:

   a. Consist of D. S. Read (Chairman), H. C. Nix and P. R. Bemis.

   b. Make recovery recommendations to the VP.

   c. Review the plans and activities of the four recovery groups before they are submitted to the VP for approval.

   d. Meet as directed by the chairman.

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3. Report Development Group will:

   a. Consist of S. B. Tipps and such other help that he designates.

   b. Develop plans and a system for collecting all information relating to the event.

   c. Receive reports on activities from other groups.

   d. After review by the Overview Board, submit a written report to the VP.

4. Investigation Group will:

   a. Consist of R. Hayes and such other help that he designates.

   b. Provide independent investigation of the events leading up to the transfer canal seal failure.

   c. Develop a report for review by ISEG (Corporate) and the Overview Board before submittal to the VP and the Senior Vice President, Nuclear Operations. The report shall include all the facts, known or suspected causes, and recommendations.

5. Support Group will:

   a. Be directed in overall activities by G. A. Goode.

   b. Provide short term assistance and engineering evaluation to the Mitigating and Clean-up Group from site assets.

   c. Provide long term analysis of effects and design changes through Corporate Engineering Liason.

6. The Mitigating and Clean-Up Group will:

   a. Be directed by R. W. Zavadoski.

b. Consist of two groups:

1. A Field Team that will continue round the clock operations to investigate further increase of potential contamination and to restore the site. When Clean-up is essentially complete, this team will be scaled down.

2. An Environmental Evaluation Group under S. Ewald that will develop medium and long range monitoring plans.

c. Conduct immediate HP monitoring of site and environment as necessary to support evaluation of the corrective actions in progress.

Actions: The following initial actions are directed:

1. The Functional Organization shown in Attachment 1 is hereby established.

2. The Overview Board will meet the week of 7 December 1986. (D. Read)

3. The four action groups will develop long range plans for review by the Overview Board during the week of 7 December 1986. (S. B. Tipps, R. W. Zavadoski, G. A. Goode)

4. A draft of the Investigative Report will be ready for review by the Overview Board by the week of 14 December 1986. (R. Hayes)

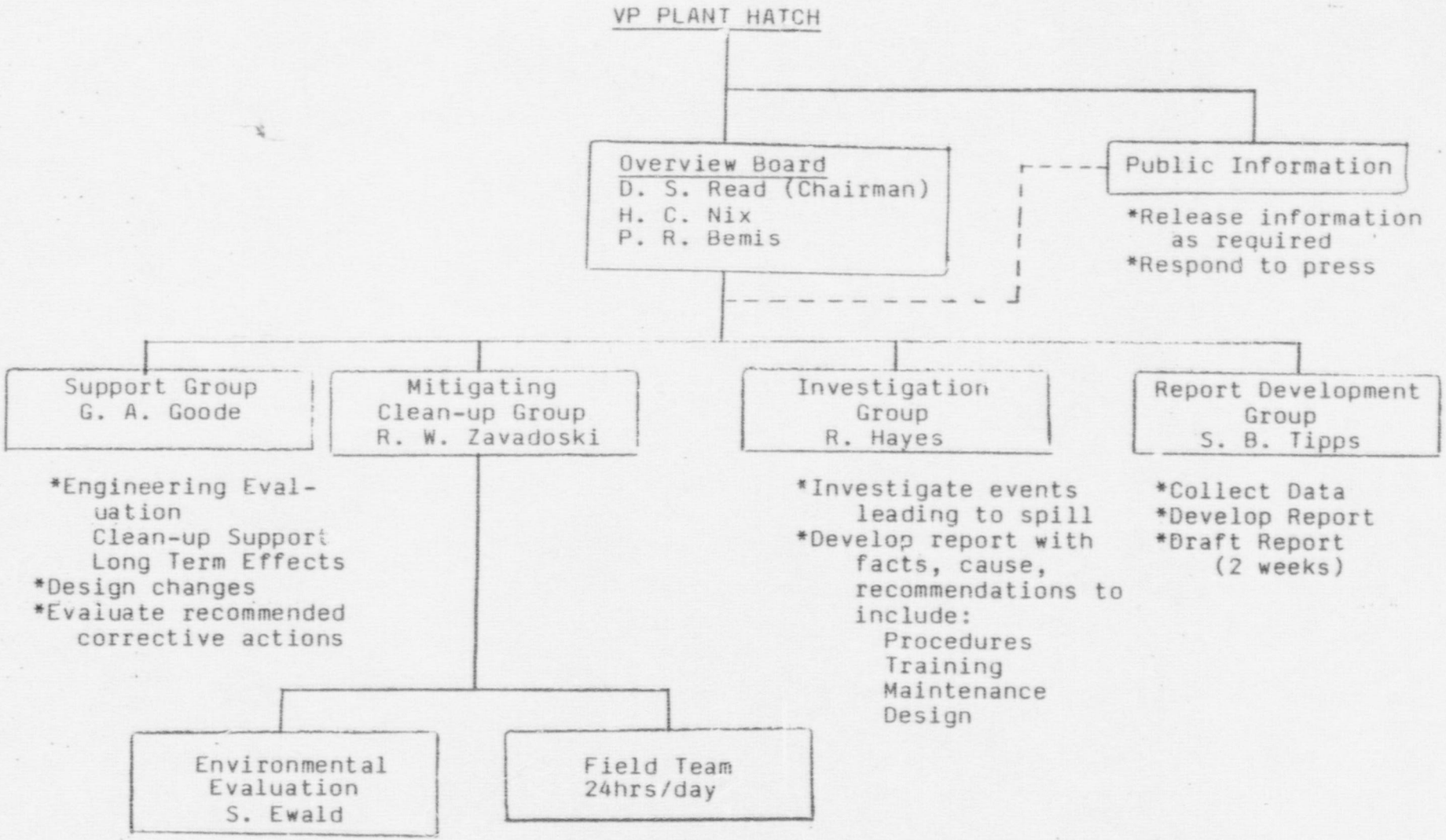
5. A draft of the Event Report will be ready by the end of the week of 14 December 1986. (S. B. Tipps)

6. The Overview Board Chairman will disband this committee or portions therof when they have fulfilled their need.

J. T. Beckham, Jr.
Vice President Plant Hatch

JTB/DSR/jjt

xc: J. P. O'Reilly
D. G. Smith
C. C. Eckert
E. M. Howard
H. L. Sumner
T. R. Powers
C. L. Coggin
K. Dyar
B. K. McLeod



Attachment 1

DAILY STATUS REPORT

UNIT: HNP-1 | DATE: 12-8-86

MODE SWITCH: R/F S/D S/U (RUN)	MWTH 2436	MWE 812	PRESS 1000	
DW AVG TEMP 163 °F	EQP DR LKG 2.13 GPM	FL DR LKG 0.40 GPM	CST LVL 24 FT.	
HW LVL 45"	COND VAC 27 IN.HG	OFF GAS FLOW 24 SCFM	PRE-TREAT RAD 16,505 μci/sec	K FACTOR 5.29
HEAT RATE 10,241 BTU/KWH	CORE FLOW 77.6 x 10^6 lb/hr		RX H_2O COND 0.17 μmho	
STATUS OF THE FOLLOWING ITEMS NEEDED EACH MONDAY AS OF 7:00 a.m.:			RIVER LVL (DAILY) 72.03 FT.	
FUEL EXPOSURE 13,670 MWD/T	RX COOLANT ACTIVITY (Iodine) 3.63 x 10^{-3} μ/ml (Copper) 14.2 ppb			

ACTIVE LCO'S

NUMBER	EQUIPMENT	NUMBER	EQUIPMENT

POWER CHANGES: Notify Lab of any power changes of >15% in one hour when made.

FROM	TO	TIME	FROM	TO	TIME	FROM	TO	TIME
None								

UNIT NARRATIVE REPORT: To include major equipment out of service, operating problems, maintenance items awaiting corrective action, tentative plans, and any other general comments of interest on unit operation.

Maintaining 100% of RTP with no major problem.

Hatch Duty Officer
GA Goode

PREPARED BY Barry Coleman

FOIA-87-76

DAILY STATUS REPORT | HNP-II | 12-8-86

MODE SWITCH: R/F S/D (S/U) RUN	MWTH 4C	MWE C	PRESS 32C

DW AVG TEMP 98 °F	EOP DR LKG 0.69 GPM	FL DR LKG 0.90 GPM	CST LVL 23 FT.

HW LVL 72"	COND VAC 6 IN.HG	OFF GAS FLOW 0 SCFM	PRE-TREAT RAD 0 µci/sec	K FACTOR 0

HEAT RATE 0 BTU/KWH	CORE FLOW 20 10^6 lb/hr	RX H_2O COND 0.18 µmho

STATUS OF THE FOLLOWING ITEMS NEEDED EACH MONDAY AS OF 7:00 a.m.:

RIVER LVL (DAILY) 72.03 FT.

FUEL EXPOSURE 0 MWD/T	RX COOLANT (Iodine) 0 µ/ml
	ACTIVITY (Copper) 12.2 ppb

ACTIVE LCO'S

NUMBER	EQUIPMENT	NUMBER	EQUIPMENT
2-84-458	MFB's		
2-86-513	RWM		
2-86-519	Fire Protection		

POWER CHANGES : Notify Lab of any power changes of >15% in one hour when made.

FROM	TO	TIME	FROM	TO	TIME	FROM	TO	TIME
Very Minor increases								

UNIT NARRATIVE REPORT: To include major equipment out of service, operating problems, maintenance items needing corrective action, tentative plans, and any other general comments of interest on unit operation.

Plant startup is in progress. Performed HPCI & RCIC low press operability runs. Mechanical vacuum pump will only pull 16" Hg, we can't put SJAE in service until we have 20" Hg. Tagged out "A" RFP to repair seal water line leaks

Hatch Duty Officer

C. A. Goode

PREPARED BY,

December 8, 1986 Monday Night Shift
OSOS-Coleman VISS-Dedrickson V2SS-Watts

Unit 1

- Maintaining 100% of RTP w/ 813 MWe.

Unit 2

- Startup is in progress
- Mech vac. pump will not pull vac. any better than 16" Hg. Several tours of the Cond. Bay hasn't revieled any leaks. Called in Engineering & HP support group for help. We ran a test and proved that nothing was wrong with the Mech. vac. pump.
- We can't put SJAE on until vac. is better than 20" Hg per procedure.
- Tagged out "A" RFP to repair seal water leaks. "B" is already tagged out & uncoupled for overspeed test.
- Slowly increasing Rx press.
- Performed RCIC & HPCI low pressure operability runs at 150 psig.
- Toured Cond. Bay.

SYSTEM RETURNED TO SERVICE.

U-2 STARTED MACH. VACUUM PUMP

U-2 I&C IS PERFORMING SURV. ON RCIC AND HPCI

U-2 APRM "C" HAS AN UPSCALL ALARM GIVING A ROD OUT BLOCK - THE APRM IS NOT INDICATING HIGH IT IS INDICATING DOWN SCALE, NORMAL - MWO [redacted] - LCO# 2-86-522 WRITTEN

U-2 D/W CHILLER TRIPPED - D/W PRESSURE .7PSIG

U-2 APRM-C REPAIRED. LCO TERMINATED 2-86-522

7-3	Sunday Dec 7, 1986
	OSOS J.R BARNES
	U1SS RE VanNadere U2SS MA Pearson
Unit1	ON Line MAINTAINING Rated thermal
Unit2	~~TS~~ START up AT 100 PSIG Approx.
Plant	SPILL clean up & Recovery continues EAST OF cooling towers
U2	After placing seal on turbine started Mech vacuum pump it ran for Approx 30 min Then Tripped checked it out could NOT Find any problem restarted it it ran for approx 40 min Then Tripped Again NOTIFIED Maint to check it.
U2	RCIC Hi Level Switch OK now
3 11 SHIFT	U-1 JBA / U-2 / OSOS TRE
	U-1 ON LINE @ 810 MWE, U-2 IN START-UP @ 140 PSIG, MECH VACUUM PUMP INOP WAITING FOR IT TO BE FIXED.
U-2	TRUCK DRIVER BACKING UP TO U-2 RADWASTE LOADING DOCK RAN OVER SOME SANITARY WATER LINES AND WATER RAN INTO THE STORMDRAINS, HAD TO SHUT OFF SANITARY WATER PUMPS AND FIND THE SHUT OFF VALVE - LEAK WAS ISOLATED AND

HNP-1

1745	345Y-SUV-009-1 Complete & SAT
2130	57SV-P33-004-1S O_2 analyzer FT in Progress
2155	57SV-P33-004-1S Stopped
2200	Relieved by R. Dedrickson
	J Anderson
2200	NIGHT SHIFT, SUNDAY 12/7/86 UNIT 1, C.R. Dedrickson. UNIT STATUS: ON LINE @ RATED THERMAL POWER; 811.8 GMWe, 10,241 HT Rate. CONTINUOUS WATCHES: ON: R/F FLOOR AND T C.W. FLUMES.
2230	PROCESSED D/R 1-86-1249 DOCUMENTING PREVIOUS FAILURE OF 1E41-N018 (HPCI DRAIN POT LS) SWITCH IS NOW OPERABLE.
2245	SS OUT OF C/R FOR TOUR
2345	SS BACK IN C/R. APPROVED R.W. DISCHARGE. 34GO-OPS-033-1S COMPLETED FOR NIGHT SHIFT. ~~34GO ard~~ 12/8/86 345V-HIC-001-1 COMPLETED UNSAT. MWO's SUBMITTED PREVIOUSLY ON UNSAT ANNUNCIATORS.
0320	3450-N21-001-1 (RPPT Daily TEST) PERFORMED SAT.
0325	3450-N36-001-1 (Mn Tmb DAILY TEST) PERFORMED UNSAT w/EXCEPTION 1N36-F009A & C
0400	SS OUT OF C/R FOR TOUR
0500	SS BACK IN C/R. ASSISTED U-2 SUPERVISOR - REVIEWED U2 DISCHARGE PERMIT, TESTED U2 MECH. VACUUM PUMP.

HNP-1

CRD 8

0600 DAYSHIFT ON FOR 12/7/86 SUNDAY ROGER VARNADORE & 816 MWE; CONTINUOUS WATCHES ON REFUEL FLOOR & COOLING TOWERS; 'B' RECIRC SCOOP TUBE LOCKED

0800 DW O2 @ 2.8%. N2 ADDITION TO DW CONTINUES

0815 34SV-H11-001-1 (CR ANNUNCIATOR TEST) COMP & UNSAT MWOS SUBMITTED AGAINST INOP ALARMS

0819 34GO-OPS-033-1S (ECCS CHECKLIST) COMP & SAT

0950 S.S. OUT OF CONTROL ROOM ON PLANT TOUR. TOURED RECOMBINER BLDG. APPROVED RW DISCH. PERMIT.

1030 S.S BACK IN CONTROL ROOM.

1100 34SV-C51-002-1S (APRM FT&C) IP

1230 34SV-C51-002-1S COMP & SAT.

1400 Relieved by J. Anderson

Roger E Varnadore

1400 Evening Shift On 12-7-86 Sunday Unit 1 Jim Anderson
2427 CMWT 810 GMWE 101% LDL 98% Flow 10222 Htrate
Continuous watches on Refuel Floor and Cooling Towers.
'B' Recirc Scoop Tube Locked

1415 Security has reported a leak in the yard by U-2 Radwaste loading Dock. SS out of Control Room to investigate.

1540 SS returned to control room. The truck hauling water ran over a sanitary water pipe, breaking a valve stem and shearing the PVC piping, the leak is isolated.
Approved CWST 'B' discharge to river.

1523 34GO-OPS-033 Complete & SAT
34SV-H11-001-1 Complete & Unsat MWOs written on failed annunciators

1600 SS out of control Room to complete 34SV-SUV-009-1

1655 SS returned to control Room

1658 34SV-C11-001-1 Complete & SAT

HNP-2

12-8-86

0033 RCIC ON FOR 150# RUN PER 345V-ES1-002 2S

0040 STILL HAVING PROBLEMS WITH MAIN CONDENSER VACUUM. IT IS IMPROVING VERY SLOWLY AND IS PRESENTLY AT ~16.1" Hg VACUUM. SHIFT IS TOURING CONDENSER BAY TO CHECK FOR ABNORMALITIES.

0105 3450-N36-001-2 (MAIN TURBINE DAILY TEST) SUBMITTED AS MISSED SURVEILLANCE

0105 3450-N31-001-2 (RFPT DAILY TESTS) SUBMITTED AS MISSED SURV.

L.C 0043 RCIC OFF

0118 345V-ES1-002-2S COMP. + SAT.

0235 HPCI ON FOR 150# RUN PER 3450-E41-002-2S.

0241 HPCI off.

0340 3450-E41-002-2S COMP. + SAT.

0345 03

1618 5750-SUV-011-2S comp + sat
1619 5750-SUV-012-2S (ATTS 2H11-P926 F7+C) in progress for HPCI/RCIC
1630 3450-SUV-013-2S (Velsky Bkr alignment check) comp + sat
1830 Received ARM Upscale Trip alarm flash on but did not receive a sprem. ARM upscale alarm came on and has stayed. The small board upscale light for ARM C is on. No ARM is showing any power Notified I+C to investigate.
1950 3450-SUV-013-2S comp + sat
2000 Initiated tracking NCO 2-86-522 on ARM C
2103 Drywell Chiller B tripped, Cannot restart Notified Maintenance for assistance. Drywell pressure rising.
2105 I+C found a bad relay causing the problem with ARM C
2200 Relieved by Jim Watts & Stephen Curtis
2200 NIGHT SHIFT. ON MAKING MONDAY 12-8-86 UNIT TWO IN WATTS ON SHIFT. REACTOR STARTUP IN PROGRESS. RAISING REACTOR PRESSURE TO 2150 PSIG FOR HPCI/RCIC TESTING. MECH VAC PUMP PULLING ONE .6" Hg VACUUM. INVESTIGATING THIS. MONITORING D/W CHILLER OPERATION. R/B CHILLED WATER SYSTEM CROSS-TIED TO DRYWELL CHILLED WATER SYSTEM.
2205 R/X PRESSURE AT 150 PSIG

HNP-2

0600	Day Shift Sunday 12-7-86 Unit Two Unchanged
	Unit Startup in Progress per 3460-OPS-001-2
	(Normal Startup Procedure.)
	Rx Pressure @ 100 PSIG and increasing to 150 PSIG
	for HPCI and RCIC Low Pressure Runs.
0730	3460-OPS-033-2 Performed (ECCS Status Checks)
0750	345V-H11-001-2 Performed Unsat (QR Ann. Test)
	MWOs written on Alarms not testing properly.
0800	LCO 2-86-378 terminated on 2N62-N009A Offgas
	H_2 Analyzer.
0815	SS out of Cont. Room on Tour
0905	SS back in Cont. Room. Inspected Mech. Vac. Pump
	Operation in 112' Cond. Bay
1102	LCO 2-86-521 terminated on IRM "C"
1400	Relieved by S. Curtis
	Unchanged
1400	Evening shift on for Sunday, Dec 7, 1986
	Stephen Curtis on Unit 2
	Unit Status: Start-up in progress,
	holding at 140 p.s.g awaiting repair
	to Mech Vac Pumps.
1415	5750-SUO-011-2 (ATTS HPCI-PS25 FT+C) in
	progress for HPCI/RCIC
1450	345V-H11-001-2 comp + upsat. Some alarms
	did not test properly. MWO's previously
1455	3460-OPS-033-2 (ECCS Status Checks) complete
1543	345V-A43-002-2 (D/G operability) comp + sat
	for B DG.
1545	Mech vacuum pump on. Vacuum
	increasing.

DAILY STATUS REPORT | MNP-I | 12-9-86 NRC

MODE SWITCH: R/F S/D S/U RUN		MWTH 2436	MWE 807.6	PRESS 986
DW AVG TEMP 102 °F	EQP DR LKG 2.15 GPM	FL DR LKG 0.35 GPM	CST LVL 25 FT.	
HW LVL 45"	COND VAC 26.5 IN.HG	OFF GAS FLOW 23 SCFM	PRE-TREAT RAD 15,200 µci/sec	K FACTOR 5.24
HEAT RATE 10,294 BTU/KWH	CORE FLOW 78.2 10^6 lb/hr		RX H_2O COND .18 µmho	
STATUS OF THE FOLLOWING ITEMS NEEDED EACH MONDAY AS OF 7:00 a.m.:			RIVER LVL (DAILY) 72.8 FT.	
FUEL EXPOSURE 13,691 MWD/T	RX COOLANT ACTIVITY (Iodine) NR µ/ml (Copper) NR ppb			

ACTIVE LCO'S

NUMBER	EQUIPMENT	NUMBER	EQUIPMENT

POWER CHANGES: Notify Lab of any power changes of >15% in one hour when made.

FROM	TO	TIME	FROM	TO	TIME	FROM	TO	TIME

UNIT NARRATIVE REPORT: To include major equipment out of service, operating problems, maintenance items needing corrective action, tentative plans, and any other general comments of interest on unit operation.

Maintaining 100% of RTP with no major problems.

Hatch Duty Officer [redacted]

PREPARED BY [redacted]

FOIA-87-76

D/64

DAILY STATUS REPORT | HNP-II | 12-9-86

MODE SWITCH: R/F S/D (S/U) RUN			MWTH 40		MWE 0	PRESS 500
DW AVG TEMP 99 °F		EQP DR LKG 1.27 GPM		FL DR LKG 0.07 GPM		CST LVL 23 FT.
HW LVL 70"	COND VAC 21" IN.HG	OFF GAS FLOW 90 SCFM		PRE-TREAT RAD 0 µci/sec		K FACTOR 0
HEAT RATE 0 BTU/KWH		CORE FLOW 20 10^6 lb/hr				RX H_2O COND µmho
STATUS OF THE FOLLOWING ITEMS NEEDED EACH MONDAY AS OF 7:00 a.m.:						RIVER LVL (DAILY) 72.8 FT.
FUEL EXPOSURE NR MWD/T		RX COOLANT (Iodine) ACTIVITY (Copper)		NR µ/ml; NR ppb		

ACTIVE LCO'S

NUMBER	EQUIPMENT	NUMBER	EQUIPMENT
2-86-523	RCIC		
2-86-519	Fire Protection		
2-86-513	RWM		
2-86-458	Misc. Fire Barriers		

POWER CHANGES : Notify Lab of any power changes of >15% in one hour when made.

FROM	TO	TIME	FROM	TO	TIME	FROM	TO	TIME
small changes in Rx power								

UNIT NARRATIVE REPORT: To include major equipment out of service, operating problems, maintenance items needing corrective action, tentative plans, and any other general comments of interest on unit operation.

Startup is in progress.
Tagged out RCIC to repair stm inlet MOV.
Having lots of trouble getting "A" SJAE to pull a vacuum.
Holding present power level & press until a proper vacuum can be established.
[illegible]

Hatch Duty Officer
[illegible]

[illegible]
PREPARED BY

December 9, 1986 Tuesday Night Shift
OSOS Coleman U/SS Dedrickson U/SS Watts

Unit 1

- Maintaining 100% at RTP w/ 813 MWe.

OSOS

7-3 Shift - Monday 08 December 86; Urquhart (OSOS), Tyre (U1), Eason (U2)

U1 - Dis Line At 812 Mwe; Maintaining Rated Power

U2 - Startup In Progress; Rx. Pressure At 300psig; Investigating Vacuum Problems

U2 - Found Vacuum Problem To Be Inadequate Steam Pressure To The RFPTs' Seal Steam Systems.

U2 - Increased Rx. Pressure To 500psig; Notified HP To Make DW Surveys For 500# Inspection

U2 - Tried To Place "B" SJAE In Service - Did Not Work.

3-11 SHIFT U-1 JDA / U-2 SFC / OSOS TLB

U-1 ON LINE @ 810 MWE, U-2 IN START-UP REACTOR @ 500PSIG

U-2 THE "B" SJAE WILL NOT WORK WE WILL TRY THE "A" SJAE.

U-2 THE DOSE RATE IN THE DRYWELL AT THE 2631 FCV VALVE IS 3 R/HR TO "HOT" TO BE ABLE TORQUE THE VALVE BONNET - WE WILL HAVE TO REMOVE INSULATION TO GET THE SCAFFOLDING OUT OF THE DRYWELL.

U-2 THE REAL FCVs AND OF THE FW VALVE IS LEAKING BY CAUSING THE TURBINE AND THE SHAFT AND BEARINGS TO BE HOT, NOT ENOUGH TO GIVE THE BEARING HIGH TEMP ALARM.

HNP-1

2155 NIGHT SHIFT, MONDAY 12/8/86 UNIT 1, C.R. DEDRICKSON; UNIT STATUS: ON LINE @ RATED THERMAL POWER, 803.10 GMWe, 10299.7 HT RATE, CONTINUOUS WATCHES ON R/F FLOOR AND AT CIRC WATER FLUME, "B" RECIRC M.G. SET SCOOP TUBE LOCKED

2248 1 AB REPORTED DRYWELL O_2 AT 2.4%

2250 57 SV-N62-001-1 H_2 ANALYZER CALIBRATION COMPLETE UNSAT

2335 34 SV-T46-002-1S D/P 1 IN PROGRESS

2340 34 SV-H11-001-1 COMPLETED UNSAT; MWO's SUBMITTED PREVIOUSLY FOR UNSAT ANNUNCIATORS. 34 GO-OPS-033-1S COMPLETED FOR NIGHT SHIFT.

0048 SS OUT OF C/R FOR TOUR

0130 SS BACK IN C/R

0230 3450-N21-001-1 (RFPT DAILY TEST) COMPLETED SAT. 3430-N36-001-1 (MnTorb DAILY TEST) COMPLETED UNSAT W/EXCEPTION IN36-F009 A&C.

Late Entry 0200 SWAPPED TO 'B' CRD PUMP. SS TOUR NOTED LEAKAGE PAST MIN FLOW STOP CHECK VALVE 1C11-F015B. ISOLATED 1C11-F015B, BUT 'A' CRD PUMP WOULD STILL NOT DEVELOP RATED PRESSURE AND FLOW. RE-OPENED 1C11-F015B, INITIATED MWO's ON 1C11-F015B, 1C11-C001A.

0600 Dayshift: Monday, 12-8-86, U-1, R.S.S Stone
Unit Status: Unit on Line @ Rated Thermal Power
CMWT - 2431, GMWE - 811 WT - 99%
Watches on R/F Flow & Circ water Flumes
'B' Recirc M-G Set Scoop Tube Locked
0714 34SV-H11-001-1 Complete & Unsat Some Alarms don't work when Tested - MWOs written.
0718 3460-OPS-033-1S ECCS Status Check Complete.
0941 DR # ~~2-8~~ 1-86-1250 (RSS 12/8/86) Filed for Improper Documentation for MWO 1-83-465 & 1-82-2107
1012 Lab reported DW O_2 @ 2.5%
1202 DR # 1-86-1251 Filed for Violation of Procedure # AG-SEC-01-0883N
1228 57SV-H11-001-1 FRM Inst FT&C in Progress
1317 57SV-H11-001-1 Complete & Sat
[illegible]
1400 Evening Shift On Monday 12-8-86 U-1 Jim Anderson
2416 CMWT, 800 GMWE 100% LLP 98.7% Flow 10320 #T rate
Continuous watches on R/F & Circ Water Flumes
'B' Recirc Scoop Tube Locked
1450 3460-OPS-033-1 Complete & SAT
34SV-H11-001-1 Complete & Unsat Some Annunciators Failed
1910 57SV-N62-001-1 H_2 Calibration in Progress
2030 DW O_2 2.1%
2110 42SV-X43-001-1 Complete & SAT
2155 Relieved by R. Dedrickson

J Anderson

12-8-86

2300 TAGGING RCIC OUT FOR MAINT TO ~~REPAIR~~ JW 12-8-86 INVESTIGATE RCIC 2ESI-F045 LEAKING PAST SEAT. LCO 2-86-523 INITIATED.

0025 MAINTENANCE HAS REMOVED SCAFFOLDING FROM IN VICINITY OF 2G31-F001. COMMENCED CONTROL ROD WITHDRAWAL.

0030 MAINT REPORTED PROBLEM WITH RCIC WAS 2ESI-F045 WAS TORQUING OUT TOO SOON. SHOULD TORQUE OUT AT 12 AMPS WAS TORQUING OUT AT 7 AMPS. THIS WAS PREVENTING FULL CLOSURE OF F045. ELECTRICIANS TO ADJUST TORQUE SWITCH.

0115 HP REPORTED THAT A CARPENTER REPORTED TO HP THAT HE HAD LOST A HAMMER IN THE DRYWELL. THEY ~~HAVE ENT~~ JW 12-9-86 ARE PREPARING TO ENTER D/W TO RETRIEVE THE HAMMER.

0310 SJAE 2A ON, MECH VAC PUMP OFF.

0345 VACUUM ON MAIN COND. IS DECREASING, PLACING MECH. VAC. PUMP BACK ON.

0400 MECH VAC PUMP ON, VACUUM IS INCREASING

HNP-2 [illegible]

12-8-86

1500 3450-HIT-001-2 comp & unsat. Some alarms did not test properly. Work is proceeding 3460-OPS-033-2 (ECCS Status Checks) complete.

1725 5750-OPT-016-2S (MSIV Hi Rad Monitor FT) in progress

1800 while unloading a N_2 truck the N_2 tanks relief valve lifted and would not close. Personnel evacuated N_2 tank enclosure and Hot Machine Shop.

1821 5750-OPT-016-2S comp & sat

1830 N_2 tank relief valve closed off at 120 psig. Will continue unloading truck and hold tanks pressure around 100 psig.

1900 Maintenance personnel are preparing to entry drywell

2030 N_2 tanks has been filled

2200 Relieved by Jeff Watts

Stephen Curtis

2200 NIGHT SHIFT ON MAKING TUESDAY 12-9-86. UNIT TWO STARTUP IN PROGRESS. JW WATTS ON SHIFT. PRESENTLY HOLDING PRESSURE AT N500 PSIG FOR TORQUING OF VARIOUS VALVES IN DRYWELL.

2215 RECEIVED WORD FROM MAINT ENG (TOM MEDLOCK AND HP (ADRIAN COLLINS) THAT MAINT SHOULD BE READY TO ~~START~~ COMPLETE TORQUING VALVES IN DRYWELL IN N 30 MINUTES. WILL START INSERTING CONTROL RODS TO REDUCE DOSE RATE IN VICINITY OF 2031-F001 SO THAT IT CAN BE TORQUED AND ITS SCAFFOLDING CAN BE REMOVED.

JW 12-8-86

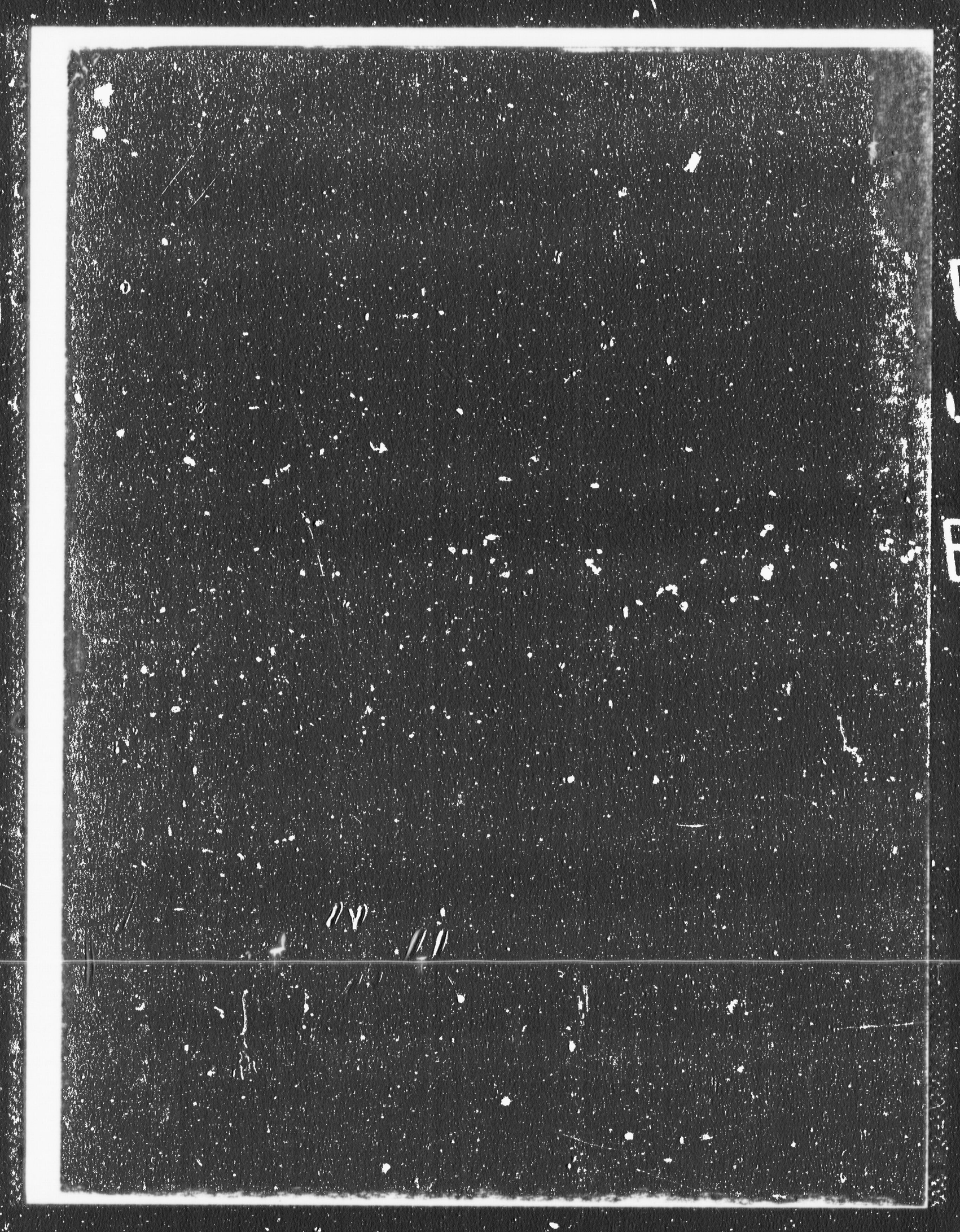
4

0600 Day shift on Monday 12-8-86 Unit II W.K.Eason
Rx Press @ 325 Psig; Mech Vac Pump on pulling 14" Vac
only; Rx Bldg chiller off crosstied with D/W chiller
0620 52SU-TS2-001-2 Pri Cont elec Penetration w/ Pressure In Progress
0642 57SU-N62-001-2 · H^2 Analyzer Calibration In Progress
0723 57SU-H11-001-2 IRM Inst Func Test Comp + SA In Progress
0725 34SU-H11-001-2 C/R ADN Test Comp + unsat
0740 34SO-OPS-033-2 ECCS Status check Comp + Sat
0745 Main Condenser Vac Increasing found stm seal manual valve to RFPT's closed
0805 57SU-N62-001-2 Comp. + Sat.
0844 57SU-H11-001-2 Comp + Sat
0934 34SU-C51-002-2 APRM Func. Test In Progress
1030 2A Rx Bldg chiller In Service crosstie valves closed
1050 34SU-C51-002-2 Comp. + Sat.
1100 Recirc Pump Seals Vented
1200 34SU-C51-001-2 SRM Func. Test In Progress
1210 Placing 2B SJAE In Service
1300 Rx Press @ 500 PSIG
1345 52SU-TS2-001-2 Comp. + Sat.
1400 Relieved By S Curtis
W.K.Eason

1400 Evening shift on for Monday, Dec, 8, 1986
Stephen Curtis on Unit 2
Unit Status: presently critical and holding 520 psig for drywell inspection. Having problems placing SJAE in service. Placing RWCU A back in service after MWPC. Shell warming in progress for Main Turbine.

FOIA
87-76

D/66



Non-applicable blocks must be marked "N/A"**

DEFICIENCY REPORT

AFFECTED UNIT(S): ( ) ONE, ( ) TWO, (X) ONE AND TWO ; REPORT NUMBER 1-86-1259

TYPE OF DEFICIENCY : (X) OPERATIONAL ; ( ) MATERIALS (SEE SECTION 8.3)

2 ITEM DESCRIPTION : Plant Condit. Outside of ~~[illegible]~~ Condition analyzed [illegible] . 3 ITEM LOCATION : Unit 1 and Unit 2 Spent Fuel Pools . 4 MPL NUMBER(S) : N/A

5 "Q" CLASS : Q . 6 P.O./SPEC. NO. : N/A . 7 CONTRACTOR / SUPPLIER : N/A . 8 MIR NO. : N/A

9 PROCEDURE NO. & REV : N/A . 10 ACTIVITY INSP: N/A . 11 HOLD TAG AFFIXED? ( ) YES ; ( ) NO ; (X) N/A ; TAG NO. : N/A

12 DEFICIENCY : During the writing of the investigation report for the 12-[illegible]-86 Spent Fuel Pool inventory loss event, it was discovered the analyzed (Unit 1 FSAR Section 10.3.5 and Unit 2 FSAR Section 9.1.2.3)

12.15.86

13 EVENT DATE : unknown TIME ____ . DISCOVERY DATE : 12/15/86 TIME 0700

14 PERSON REPORTING, DEPT., AND DATE : [illegible] Regulatory Compliance, 12/15/86 . 15 SHIFT SUPERVISOR NOTIFIED & DATE: [illegible] ~~12/15/86~~ TIME ~~1202~~ ; 12/16/86 TIME 0758

12.15.86

16 IMMEDIATE NOTIFICATION REQUIRED : ( ) NO
(✓) YES : 1 HOUR REPORT NUMBER ____________ (MADE AS PER 40AC-REG02-0)

17 REACTOR PARAMETERS : 2433 MWt THERMAL POWER ; 985 PSIG PRESSURE ; 520 °F TEMPERATURE

18 MODE SWITCH POSITION : (✓) RUN , ( ) STARTUP AND HOT STANDBY
( ) SHUTDOWN , ( ) REFUEL

19 CORRECTIVE ACTION(s) TAKEN:

A. TECH SPECS. REQUIRED ACTION(S) TAKEN? (✓) YES ; ( ) NO ; ( ) N/A
1. IF YES, LIST APPLICABLE TECH. SPECS. SECTION(S) AND SUMMARIZE THE ACTION TAKEN: ____________
2. IF NO OR N/A, EXPLAIN : FUEL POOL GATES FOR RX CAVITY AND FUEL XFER CANAL HAVE BEEN INSTALLED.

B. LCO INITIATED ? ( ) YES ; LCO NUMBER: ____________ ; (✓) NO

C. MWO INITIATED ? ( ) YES ; MWO NUMBER: ____________* ; ( ) NO
( ) MWO NOT REQUIRED ; (✓) NOT AT THIS TIME

20 COMPLETED BY: [illegible] SHIFT SUPERVISOR'S SIGNATURE ; 12/16/86 DATE ; 0710 AM/PM REPORT TIME

* IF KNOWN ** FOR MATERIAL DRs, BLOCKS 15 THRU 20 MAY REMAIN BLANK.

HGB-0031 Rev. 0

FOIA-87-76
D/67

Nt. 12/18/86 - pg 2 of 4 typ blank per John Paquet (x 2000). gn

DEFICIENCY REPORT CONTINUATION SHEET

TYPE OF DR : ∞ OPERATIONAL ; ( ) MATERIAL ; REPORT NUMBER L-86-1207

TO USE THIS PAGE: (1) INDICATE THE BLOCK NUMBER TO WHICH YOU WISH TO ADD ADDITIONAL INFORMATION ; (2) ADD THE DESIRED INFORMATION ; AND (3) SIGN AND DATE THIS PAGE

(12)

"worst case" accident concerning Spent Fuel Pool inventory does not address the storage of spent control rod blades. The two analyses, which are very similar, ~~analyze~~ analyze the draining of the Spent Fuel Pools to a point 14 feet 9 inches above the pool bottom. This level is equivalent to the bottom of the transfer canal. At this level, water would cover the spent fuel. The analyses assume the corrective actions would be to "position gate over canal entrance" and refill "pool to normal level." Thus, of course, assumes radiation levels would be low enough to allow plant personnel to place the gates over the canal entrance. The analyses do not take into account any highly radioactive material stored above the top of the fuel racks.

Spent Control Rod Blades are stored on hangers suspended from wall brackets located on the ~~sides~~ of the Spent Fuel Pools. There is a "short" hanger and a long "hanger." The long hanger is approximately 24 feet long and allows the control rod blades to be suspended to within two inches of the pool floor for the "worst case" inventory loss, one inch of water would remain above the control rod blades and handle. The short hanger is approximately 9.5 feet long and suspends the control rod blade several inches above the top of the spent fuel storage racks.

INFORMATION ADDED BY : _____ SIGNATURE 12/15/86 DATE

DEFICIENCY REPORT CONTINUATION SHEET

TYPE OF DR : (X) OPERATIONAL ; ( ) MATERIAL ; REPORT NUMBER 1-86-1257

TO USE THIS PAGE: (1) INDICATE THE BLOCK NUMBER TO WHICH YOU WISH TO ADD ADDITIONAL INFORMATION ; (2) ADD THE DESIRED INFORMATION ; AND (3) SIGN AND DATE THIS PAGE

(12) (continued from page 3)

This means the entire control rod blade would be uncovered in the analyzed accident. If the top four inches of the spent control rod blade are uncovered, high radiation levels would result. This is due to the high levels of Cobalt (Co) 60 contained in the four guide rollers located at the top of the blade. The dose rates from even one spent control rod blade (on the order of 8,000 to 10,000 R/hr) would make it impossible to get onto the Refueling Floor to place the gates over the canal entrance. At the present time, there are several spent control rod blades suspended from hangers in the Unit 2 Spent Fuel Pool. Under these conditions, the worst case accident is draining the pools to a level equal to the bottom of the transfer canal when spent control rods are stored on "short hangers." This accident is not analyzed as the presently stated corrective actions could not be taken due to excessive radiation levels.

This situation is not an immediate concern because both Spent Fuel Pools are isolated from the only credible leakage paths: the Refueling Bellows and the Transfer Canal. This is because all gates are installed (this is also one of the "worst case" accident recovery actions).

INFORMATION ADDED BY : [signature] 12/15/86

SIGNATURE DATE