

AUG 30 1988

MEMORANDUM FOR: Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

FROM: Johns P. Jaudon, Acting Branch Chief
Events Assessment Branch
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

SUBJECT: THE OPERATING REACTORS EVENTS MEETING
August 30, 1988 - MEETING 88-35

On August 20, 1988, an Operating Reactors Events meeting (88-35) was held to brief senior managers from NRR, OSP, AEOD, Commission Staff, and Regional Offices on events which occurred since our last meeting on August 23, 1988. The list of attendees is included as Enclosure 1.

The events discussed and the significant elements of these events are presented in Enclosure 2. Enclosure 3 presents one event suggested for long term followup and a summary of reactor scrams for the week ending August 28, 1988. One significant event was identified for input to NRC's Performance Indicator Program.

Johns P. Jaudon, Acting Branch Chief
Events Assessment Branch
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Enclosures:
As stated

cc w/Enclo.:
See Next Page

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- LKilgore, SECY
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*OFo3
1/1
TDR-5-1
OPERATING
EXPERIENCE*

OFC : EAB:NRR	: C:EAB:NRR	:	:	:	:	:
NAME : MLReardon	: JPPaudon	:	:	:	:	:
DATE : 08/30/88	: 08/30/88	:	:	:	:	:

OFFICIAL RECORD COPY

8809080276 830830
PDR ORG NRRB
PDC

cc:

T. Murley, 12G-18
F. Miraglia, 12G-18
E. Jordan, AEOD
E. Beckjord, NL-007
W. Russell, RI
B. Davis, RIII
J. N. Grace, RII
R. D. Martin, RIV
J. B. Martin, RV
W. Kane, RI
L. Reyes, RII
E. Greenman, RIII
J. Callan, RIV
D. Kirsch, RV
S. Varga, 14E-4
D. Crutchfield, 13A-2
B. Boger, 14A-2
G. Holahan, 13H-4
G. Lainas, 14H-3
L. Shao, 8E-2
J. Partlow, 7D-24
B. Grimes, 9A-2
F. Congel, 10i-4
E. Weiss, AEOD
T. Martin, 12G-18
J. Guttmann, SECY
A. Thadani, 7E-4
S. Rubin, AEOD
R. Barrett, 10E-2
M. Harper, MNBB 4210

J. Sniezek, 12G-18
J. Forsyth, INPO
W. Lanning, MNBB 3302
H. Abelson, 14B-2
R. Capra, 14B-2
W. Paulson, 13D-18
J. Calvo, 13D-18



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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A handwritten signature in cursive script, reading "John P. Jaudon".

Johns P. Jaudon, Acting Branch Chief
Events Assessment Branch
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Enclosures:
As stated

cc w/Enclo.:
See Next Page

LIST OF ATTENDEES

OPERATING REACTORS EVENTS BRIEFING (88-35)

August 30, 1986

<u>NAME</u>	<u>ORGANIZATION</u>	<u>NAME</u>	<u>ORGANIZATION</u>
R. Scholl	NRR/DOEA	M.L. Reardon	NRR/DOEA
D. Crutchfield	NRR/DRSP	P. Baranowsky	NRR/DOEA
D.C. Fischer	NRR/DOEA	B. Boger	NRR/ADR-1
S. Varga	NRR/DRP	J. Jaudon	NRR/DOEA
G. Lainas	NRR/ADR-2	J.E. Konklin	NRR/DRIS
W.A. Paulson	NRR/PD-4	J. Guttmann	SECY
J.A. Calvo	NRR/DRSP	T.O. Martin	OEDO
M. Karman	OCM/KR	F.J. Miraglia	NRR ADP
C. Schulten	NRR/DOEA	M. Callahan	GPA/CA
W. Hodges	NRR/DEST	T. Novak	AEOD/DSP

OPERATING REACTORS EVENTS BRIEFING 88-35

EVENTS ASSESSMENT BRANCH

LOCATION: 12-B-11 WHITE FLINT

TUESDAY, August 30, 1988, 11:00 A.M.

FITZPATRICK

DROPPED FUEL BUNDLE

RIVER BEND

SCRAM FROM 100% POWER WITH INITIATION
OF ENGINEERING SAFETY FEATURE AND
FAILURE OF POWER TO TRANSFER TO OFFSITE

FITZPATRICK
DROPPED FUEL BUNDLES
AUGUST 22, 1988

PROBLEM

A NEW FUEL BUNDLE WAS DROPPED INTO NEW FUEL STORAGE VAULT WHEN ATTEMPTING TO LIFT IT INTO FUEL PREP. MACHINE IN SPENT FUEL POOL WITH OVERHEAD CRANE.

CAUSE

- o PROCEDURES ALLOWED MOVEMENT OF BOTH OVERHEAD CRANE AND REFUELING BRIDGE DURING NEW FUEL HANDLING.
- o OVERHEAD CRANE SWIVEL STUD FAILED AFTER ITS CABLE COLLIDED WITH REFUELING BRIDGE MONORAIL HOIST.

SAFETY SIGNIFICANCE

POTENTIAL FOR DAMAGING FUEL EITHER IN SPENT FUEL POOL OR THE NEW FUEL STORAGE VAULT.

DISCUSSION

- o AT 10:15 P.M., THE REACTOR WAS COASTING DOWN FOR REFUELING. AN SRO OPERATING THE REFUELING BRIDGE SNAGGED THE OVERHEAD CRANE CABLE WITH THE MONORAIL HOIST, WHICH HAD A NEW FUEL BUNDLE SUSPENDED FROM IT.
- o SRO MOVED BRIDGE TO RELEASE THE CABLE. SUBSEQUENTLY, WHEN THE FUEL TRANSFER PROCEEDED THE OVERHEAD CRANE SWIVEL STUD BROKE, AND THE NEW FUEL ASSEMBLY FELL 2 FT INTO THE NEW FUEL VAULT.
- o LICENSEE IDENTIFIED CAUSE OF DROP AS FAILURE OF SWIVEL STUD WHICH CONNECTS GENERAL PURPOSE GRAPPLE TO OVERHEAD CRANE HOIST CABLE.

FOLLOWUP

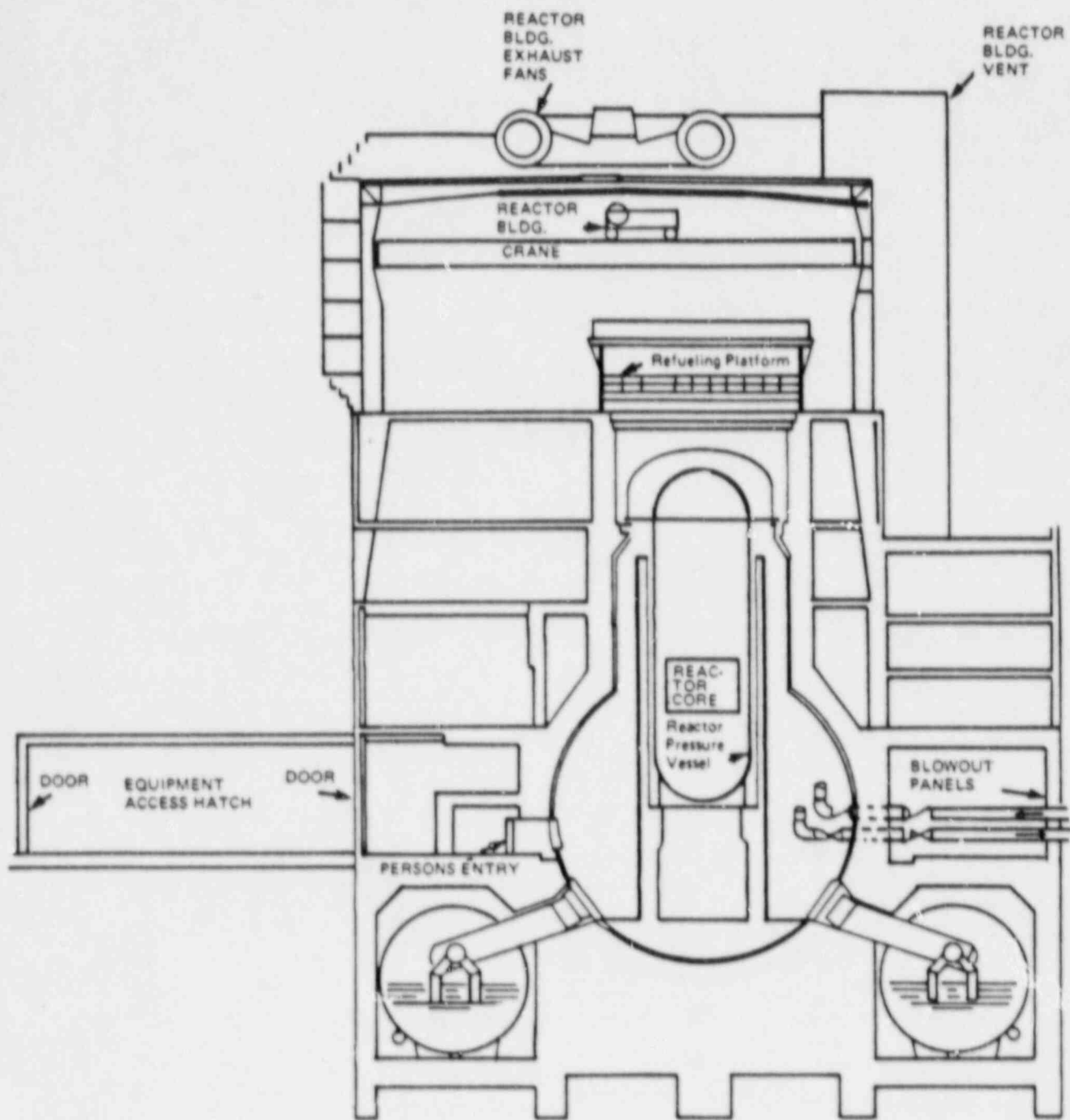
- o LICENSEE'S PROCEDURES FOR LOAD TESTING SWIVEL STUD NOT IN ACCORDANCE WITH GE SIL NO. 10,
- o LICENSEE HAVING METALLURGICAL EXAM OF SWIVEL STUD.
- o DROPPED FUEL ASSEMBLY TO BE SHIPPED TO WILMINGTON, NC AFTER GE REPRESENTATIVE INSPECTS FOR DAMAGE.

CONTACT: C. SCHULTEN

REFERENCE: MORNING REPORTS DATED 08/22/88 AND 08/24/88

FOLLOWUP (CONTINUED)

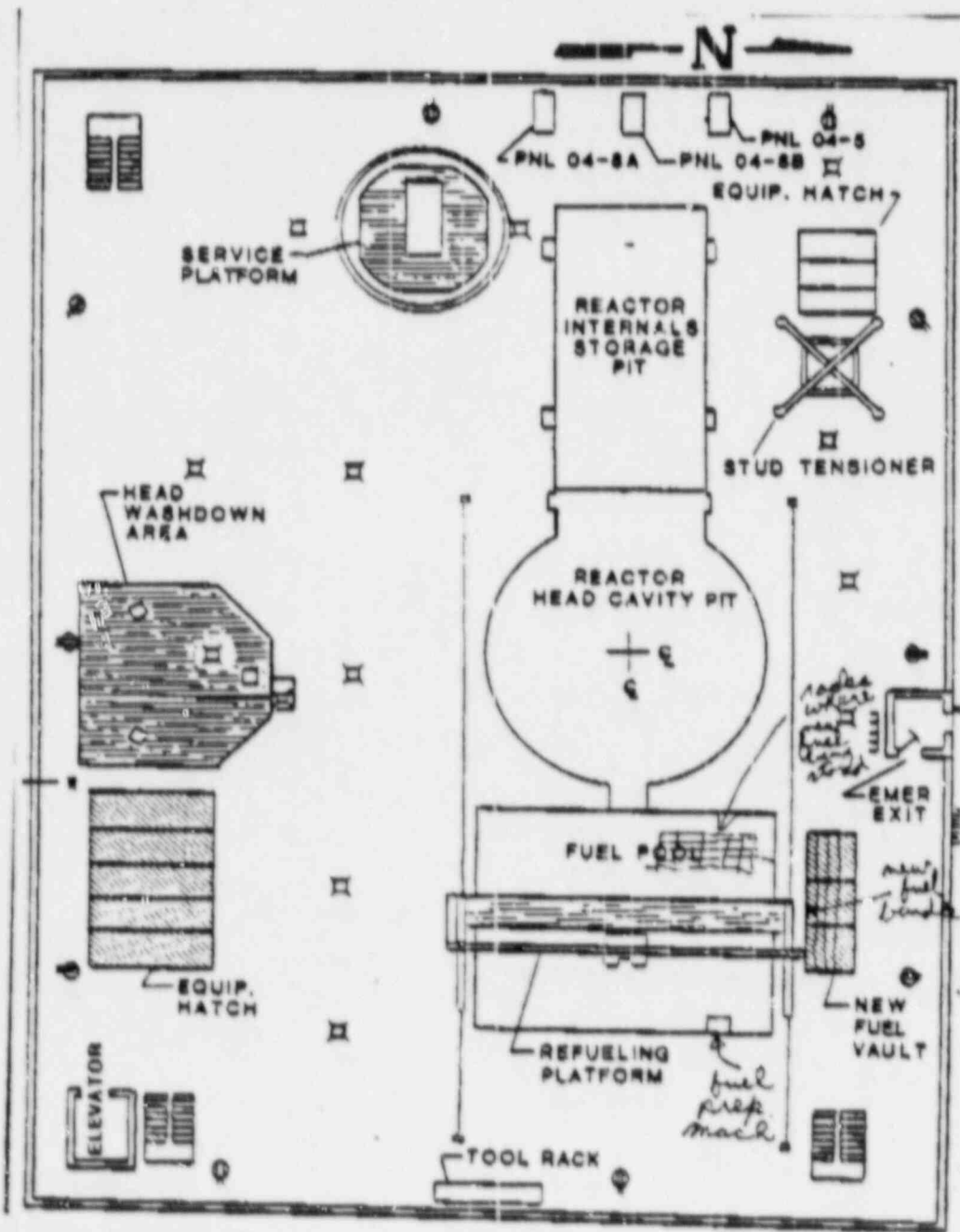
- o LICENSEE INTENDS TO IMPROVE PROCEDURES AND RETRAIN PERSONNEL.
- o SEVERAL GE SILS HAVE BEEN ISSUED, THE LATEST WAS SIL NO. 10, ISSUED IN DECEMBER 1986.



FITZPATRICK

SECONDARY CONTAINMENT

FITZPATRICK



METAL STAMP OR ELECTROETCH IDENTIFICATION:
GENERAL ELECTRIC CABLE TERMINAL
*129B3131G---(GROUP NO. AS APPLICABLE)

*6001
7/16 - 14 UNC
FEMALE THREAD

*6002
1/2 - 13 UNC
FEMALE THREAD



7/16 - 14 UNC
MALE THREAD

FITZPATRICK

FIGURE 1 - CABLE TERMINAL
(Used in DWR 2,3,4 and 5)

RIVER BENDSCRAM FROM 100% POWER WITH INITIATION OF ENGINEERING
SAFETY FEATURE AND FAILURE OF POWER TO TRANSFER TO OFFSITE

AUGUST 25, 1988

PROBLEM

REACTOR SCRAMMED FROM 100% POWER WITH SPURIOUS START OF HPCS AND RCIC. THE DIVISION III 4160 VAC DID NOT TRANSFER TO OFFSITE POWER. SUBSEQUENTLY, THE HPCS INJECTION PIPING WAS SUBJECTED TO REACTOR COOLANT.

CAUSE

- o THE PLANT EXPERIENCED A SERIES OF COMPONENT FAILURES AND PROBLEMS. A GENERATOR BRUSH FAILURE CAUSED THE PLANT SCRAM. AN UNDERVOLTAGE RELAY FAILURE CAUSED A LOSS OF DIVISION III POWER. A FAILURE OF THE HPCS CHECK VALVE AND THE INJECTION VALVE PERMITTED WATER TO FLOW FROM THE REACTOR VESSEL TO THE SUPPRESSION POOL VIA THE MINIMUM FLOW LINE.
- o THE SPURIOUS START OF THE HPCS AND RCIC WAS CAUSED BY PERTURBATIONS IN THE REFERENCE LEGS AS A RESULT OF THE STEAM DOME PRESSURE TRANSIENT.

SAFETY SIGNIFICANCE

THE PLANT DID NOT RESPOND TO A REACTOR TRIP IN AN EXPECTED MANNER.

DISCUSSION

- o SEQUENCE OF EVENTS:
 - GENERATOR TRIPPED FROM 100% POWER.
 - TURBINE TRIPPED.
 - REACTOR SCRAMMED.
 - DIVISION III 4160 VAC DID NOT TRANSFER TO OFFSITE.
 - RPS MOTOR GENERATOR SET "A" TRIPPED.
 - HPCS AND RCIC STARTED SPURIOUSLY.
 - INSTRUMENT AIR COMPRESSORS TRIPPED ON HIGH TEMPERATURE.
 - HPCS SYSTEM SECURED.
 - HPCS DISCHARGE PIPING TEMPERATURE LIMITS WERE EXCEEDED.
 - HPCS VALVES EVENTUALLY SEALED OFF THE LEAK.

CONTACT: R. SCHOLL

REFERENCE: 50.72 #s 13285 AND 13292, MORNING REPORT 08/26/88, AND
PNO-IV-88-70

o ANALYSIS OF EVENTS:

- THE PLANT RESPONSE TO THE INITIAL FAILURE WAS AS EXPECTED.
- THE FAILURE TO TRANSFER DIVISION III POWER RESULTED IN A TRIP OF THE "A" RPS MOTOR GENERATOR SET.
- THE PRESSURE TRANSIENT IN THE STEAM DOME WAS LARGER THAN AT MOST PLANTS BECAUSE RIVER BEND ONLY HAS A 10% BYPASS CAPACITY.
- THE PEAK VESSEL PRESSURE WAS 1115_± PSIG.
- THE LOSS OF THE MOTOR GENERATOR SET CAUSED ISOLATION OF THE CONTAINMENT, SERVICE WATER SYSTEM AND CONTROL ROOM.
- THE LOSS OF SERVICE WATER COOLING CAUSED THE INSTRUMENT AIR COMPRESSORS TO TRIP ON HIGH TEMPERATURE.

FOLLOWUP

- o GENERIC LETTER 88-14 FOLLOWUP WILL DETERMINE THE SIGNIFICANCE OF A LOSS OF INSTRUMENT AIR AT RIVER BEND.
- o THE STAFF IS PURSUING A REVIEW OF THE LICENSEE'S EVALUATION OF THE LEAKING HPCS INJECTION AND CHECK VALVES.

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08/26/88

SUGGESTED LONGTERM FOLLOWUP

DATE OF EVENT	PLANT NAME AND UNIT	SIGNIFICANT EVENT	INITIAL FOLLOWUP ASSIGNMENT	SUGGESTED RESOLUTION	SUGGEST TRANSFER TO:	EXPECTED COMPLETION DATE
07/29/88	PALO VERDE 2	J.F.	POTENTIAL DESIGN PROBLEM WITH POTTER & BRUMFIELD SUPPLIED RELAYS. EXAMINE THE SAFETY SIGNIFICANCE OF THE PROBLEM AND DETERMINE GENERIC APPLICABILITY. IS THIS FAILURE SIMILAR TO RELAY FAILURES THAT COULDN'T ENDURE AN EQUALIZER CHARGE	POTTER-BRUMFIELD MDR RELAY FAILURES - PLANT SPECIFIC ISSUE - PALO VERDE UNIT 2, LONG-TERM FOLLOWUP ASSIGNED TO NRR/SICB. NRR/SICB ASSIGNED TO MONITOR MDR RELAY FAILURES AT PALO VERDE AND REVIEW THE POTTER-BRUMFIELD FINAL REPORT AND THE LICENSEE'S SEISMIC QUALIFICATION ANALYSIS. DETERMINE WHETHER THE LICENSEE'S SHORT-TERM AND LONG-TERM CORRECTIVE ACTIONS ARE ADEQUATE. ASSIGNED TO JIM STEWART, SICB. NOTE: TAC # 69192 FOR PALO VERDE UNIT 1 TAC # 69193 FOR PALO VERDE UNIT 2 TAC # 69194 FOR PALO VERDE UNIT 3	NRR/SICB	/ /

PERFORMANCE INDICATORS SIGNIFICANT EVENTS

PLANT NAME	EVENT DATE	EVENT DESCRIPTION	QTR SIGNIFICANCE
RIVER BEND	08/25/88	PLANT TRIP ON GENERATOR BRUSH FAILURE WITH FAILURE OF DIVISION III 4160 VAC AND BACK LEAKAGE THROUGH HPCS INJECTION AND CHECK VALVES.	O UNEXPECTED PLANT RESPONSE TO A SET OF CONDITIONS

REACTOR SCRAM SUMMARY
WEEK ENDING 08/28/88

I. PLANT SPECIFIC DATA

DATE	SITE	UNIT	POWER	SIGNAL	CAUSE	COMPLI- CATIONS	YTD	YTD	YTD
							ABOVE	BELOW	TOTAL
							1%	1%	
08/24/88	CALVERT CLIFFS	1	100	A	EQUIPMENT	NO	2	0	2
08/25/88	COOPER	1	100	A	EQUIPMENT	NO	3	0	3
08/25/88	RIVER BEND	1	100	A	EQUIPMENT	YES	3	1	4
08/26/88	OCONEE	3	100	A	EQUIPMENT	NO	1	0	1
08/26/88	SOUTH TEXAS	1	100	A	EQUIPMENT	NO	3	1	4
08/26/88	HOPE CREEK	1	100	A	EQUIPMENT	NO	3	1	4
08/27/88	PALO VERDE	1	16	A	PERSONNEL	NO	5	1	6

SUMMARY OF COMPLICATIONS

SITE	UNIT	COMPLICATIONS
RIVER BEND		1 FAILURE OF AUXILIARY RELAY PREVENTED TRANSFER OF DIVISION III #160 VAC , PIPING THERMAL DESIGN LIMITS EXCEEDED DUE TO HPCI CHECK VALVE AND INJECTION VALVE LEAKAGE .