| NRC Form (9-83) | 388 | | | | | | | LIC | ENS | EE EV | ENT | REI | PORT | LER |) | | | U.S. N | APP EXP | AR | REQU VED 0 5 8/3 | MB M 1/38 | IO 3 | 150-01 | 04 |
|--------------------|--|--|---|------------|------------------|------------------|-------|----------------------------|-----------------------|--------------------------------|---|---------|----------|---------------------|-----------|------------------|------------------|----------|-----------------|-----|------------------------|--------------|------|--------|-------|
| ACILITY | NAME (1 | | | | accurated the co | og minister og s | - | Compatital activity of the | C Series and a second | ante su castala de la casta da | central de la | **** | | 15. 7010-10-10-10 | | 00 | CKET | UNBEI | R (2) | | | | | PAG | E (3) |
| | Br | unsw | ick S | stea | m El | ecti | ric | Pla | nt U | nit 2 | 2 | | | | | 10 | 151 | 010 | 10 | 13 | 12 | 14 | 1 | OF | 01 |
| TITI _ (4) | Lo er Su | ss o pply | f Uni Elec | t 2 tri | Rea | ctor | r I | Prote | ctio | n Sys | stem | Div | vision | n 1 | Bus | Due | to | Tri | pp | i n | g o | f A | 1t | ern | ate |
| EVE | EVENT DATE (5) LEA NUMBER (6) REPORT DATE (7) OTHER FA | | | | | | | | | | ACILITIES INVOLVED (8) | | | | | | | | | | | | | | |
| MONTH | DAY YEAR YEAR SEQUENTIAL REVISION | | | | | MONT | H DAY | YE | EAR | | FA | CILITY | NAME | 5 | | DOCKET NUMBER(S) | | | | | | | | | |
| | | | | | | | | an anna dh'ad an anna dh' | | | - | | | | | | | | 0 | 15 | 10 | 10 | 10 | 1 | 11 |
| 0 7 | 2 7 | 8 7 | 87 | - | 00 | 18 | - | 00 | c 8 | 3 2 0 | 8 | 7 | | | | | | | 0 | 15 | 10 | 10 | 10 | 1 | |
| OPE | RATING | | THIS RI | EPORT | IS SUBA | ATTED | PUP | RSUANT | TO THE | REQUIRE | EMENT | S OF 10 | CFR & (0 | Check o | ne or m | ore of | the follo | owing) { | 11) | - | | | | | |
| MO | ODE (9) 1 20.402(b) 20.405(c) X 50.7 | | | | | | | | 50.73 | B(a)(2)(| ¥) | | | - | | 3,71() |) | | | | | | | | |
| POWER | R | | 26 | 0.405 (a |)(1)(i) | | | | 50.36 | (e)(1) | | | | | | - | 73.71(c) | | | | | | | | |
| (10) | 11 | 010 | 0 20.405(a)(1)(ii) 50.36(c)(2) 50.73(a)(2)(vii) | | | | | | | (iii) | | | - | DTHER Specify in Ab | | | | | tract C Form | | | | | | |
| | | 20.405(a)(1)(iii) 50.73(a)(2)(ii) 50.73(a)(2)(viii)(A) | | | | | | | | 166A) | | | | | | | | | | | | | | | |
| | 20.405(a)(1)(iv) 50.73(a)(2)(ii) 50.73(a)(2)(viii)(B) | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 20 | 0.405 (s | (1)(1)(v) | | | | 50.73 | (a)(2)(iii) | | | | 50.73 | 3(#)(2)(| £) | | | 1 | | | | | | |
| | | | | | | | | 1 | ICENSE | E CONTA | CT FO | R THIS | LER (12) | | | | | | | | | | | | |
| NAME | | | | | | | | | | | | | | | | | ARE | a cons | TEL | EP | TONE | NUM | BEH | | |
| | м | T | 0.e.e.t. | | T | Dee | 1 | | | | | man | hudad | | | | Inne | - COUS | | | | | | | |
| | 11. | J | rastv | a, | JI., | Rea | gui | lator | y 00 | mprie | ance | Tec | ennici | an | | | 191 | 119 | 14 | 15 | 17 | - | 12 | 13 | 111 |
| | | | - | | COMP | LETE C | ONE | LINE FOF | EACH | COMPON | ENT FA | ILURE | DESCRIBE | DINT | HIS RI | PORT | (13) | | | | | | | | |
| CAUSE | SYSTEM | COMP | ONENT | | TURER | c. | REPO | NPROS | | | CAUSE S | | SYSTEM | COM | COMPONENT | | MANUFAC TURER | | - | TO | NPRO | BLE | | | |
| | | 1 | 11 | | 1.1 | 1 | | | | ana anasa 100 | | | | | 1 | | 1 | | | | | | | | |
| | | | 11 | | 1.1 | | | | | | | | | | 1 | | 1 | | | | | | | | |
| | | | | | SUPP | LEME | NTAL | REPORT | EXPEC | TED (14) | | | | | | | | EXPEC | TEO | | M | ONTH | 0 | YAC | YEA |
| YE | s ill yes, c | omplata l | XPECTE | DSUB | MISSION | DATE | | | | XNO | 0 | | | | | | | DATE | \$10N (15) | | | 1 | | 1 | 1 |

ABSTRACT (Limit to 1400 speces, i.e., approximately fifteen single-space typewritten lines) (16)

At approximately 0506 hours on 7/27/87 the Unit 2 Division 1 (A logic) Reactor Protector System (RPS) (C71) bus unexpectedly deenergized following an evolution to transfer the power supply of the bus from the normal to the alternate source to allow maintenance on the bus motor generator set output breaker. Per design, an autoscram signal on RPS Division 1 and Groups 1 (A Logic), 2, 6, and 8 primary containment isolations occurred. In addition, the Reactor Building Ventilation System autoisolated and the Standby Gas Treatment System autostarted. The Control Operator became aware of this event through Control Room indication and alarm annunciation.

An investigation determined this event resulted from low voltage conditions from the alternate power supply allowing the undervoltage trip setpoint of the power source electrical protection assembly (EPA) C71-EPA6 to actuate.

EPA6 was replaced as a precautionary measure. A plant modification has been developed and is awaiting implementation to install a voltage regulating transformer in the alternate power supply circuit in order to help prevent future similar occurrences.

8709030084 870820 PDR ADOCK 05000324 0 PDR

1822 1

| LICENSEE EVEN | T REPORT | (LER) TEXT | CONTINUATION |
|---------------|----------|------------|--------------|
|---------------|----------|------------|--------------|

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104 EXPIRES: 8/31/88

| FACILITY NAME (1) | DOCKET NUMBER (2) | | | | | LER NUMBER (6) | | | | | | | | | PAGE (3) | | | | | | |
|---------------------------------------|-------------------|----|---|----|-------|----------------|---|----|---|----|----|---|----|-------|----------|---|-------|-----|----|----|----|
| Brunswick Steam Electric Plant Unit 2 | | | | | | | | | | YE | AR | - | SE | QUEN. | ER | | NUMBE | V a | | | |
| | 0 | 15 | 0 | 10 | 0 0 | 0 | 3 | 21 | 4 | 8 | 17 | - | 10 | 00 | 8 | - | 010 | 02 | 01 | 10 | 13 |

TEXT (If more space is required, use additional NRC Form 366A's) (17

NRC Form 386A

Initial Conditions

Unit 2 was on line at 100 percent power. An evolution was in progress to transfer the power supply of Reactor Protection System (RPS) (EIIS/JC) (C71) Division 1 (A logic) bus from the normal (EIIS/JC/BKR) to the alternate power source (EIIS/JC/BKR). This was to permit maintenance on the bus motor generator (MG) set (EIIS/JC/EKR) output breaker (EIIS/JC/BKR).

Event Description

At approximately 0506 hours on July 27, 1987, the power supply of 2A RPS bus was transferred from the normal to the alternate power source. As anticipated, the transfer resulted in responses of engineered safety features (ESF) as listed in Table 1. Approximately 30 seconds after the transfer was completed the bus unexpectedly deenergized due to tripping of the RPS alternate power source electrical protection assembly (EPA) C71-EPA6 (EIIS/JC/BKR), which again resulted in the plant responses as listed in Table 1. (EPA6 is in electrical series with redunt ant EPA5). The Unit 2 Control Operator became aware of this event through Control Room (EIIS/NA) indication and alarm annunciation. In response to this event, at 0507 hours, the bus power supply was realigned to the normal power source and at 0516 hours the incurred isolation/initiation signals were reset and the affected systems returned to normal. An appropriate Work Request/Job Order (WR/JO) was then initiated to investigate the cause of the subject EPA trip.

Investigation of Event

Troubleshooting revealed that the breaker exhibited a shorter time over current trip during multiple trip testing than desired. While values were found outside the envelope, it would not have caused the observed trip. As a precautionary measure, the device, General Electric Part No. DA3043633P001, was replaced and the breaker was returned to service. During the continuing investigation, output voltage from the bus alternate power supply transformer (EIIS/JC/XFMR) was found to be 112 volts (V) alternate current (ac) at a system grid voltage of 234 kilo (K) Vac. The undervoltage trip of EPA6 is 109.6 Vac. At the time of the event the system grid voltage was 232K Vac, which correlates to an alternate power supply transformer output voltage of less than 111 Vac. The investigation concluded the event occurred due to decreased voltage conditions on the bus, resulting from the system grid voltage of 232K Vac, which caused the alternate power supply transformer output voltage to decrease to the undervoltage trip setpoint of EPA6.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OM8 NO. 3150-0104 EXPIRES: 8/31/88

| | | - | in more | | | - | Alternation of the local division of the loc | | Concernance of the second | | ARABA CRIM | optimization of | supplied Description | C2 85 MPT/METO | Children and the second state of the | NAMES OF TAXABLE PARTY. | AND INCOME. | ALC: NO. | A MARKAGE AND |
|-----------------------------------|------------|--------|--------------|--------|--------------------|-------------|--|------------|---------------------------|------------------|---------------|-----------------|----------------------------|----------------|---|-------------------------|--------------------|----------|---|
| FACILITY NAME (1) | DOCH | KET | NUN | NB 5 M | [2] | | | | | | LEP | NU | MBER (6 |) | | P | AGE (| 3) | |
| Devenuerich Change Plantain Diast | | | | | | | | | YE | AR | | SEQU | MBER | 1 | NUMBER | | | | |
| brunswick Steam Electric Plant | | | | | | | | | | | | | | | | | | | |
| Uhit 2 | 0 | 5 | 0 | 0 | 0 | 3 | 12 | 14 | 8 | 7 | | 0 | 0 8 | | 00 | 03 | OF | 0 | 3 |
| | deres sand | beaute | A - 10141616 | - | all shows a second | dan pet nam | advortunes. | nd Antinas | durence | ber realized and | Concernant of | | Construction of the second | | Provide and Annual A | | | | |

TEXT of more space is required, use additional NRC Form 366A's) (17)

Corrective Action

As a result of a prior similar event, reported in LER 2-86-018, a plant modification has been developed and is presently awaiting implementation to install a voltage regulating transformer in the RPS alternate power supply circuit. The intent of this modification is to prevent voltage decrease of the main grid from affecting the RPS bus.

Event Assessment

An assessment of this event, under reasonable and credible alternative conditions, showed the consequences of this event would not have been more severe. Had this event occurred while the other RPS bus (Division II) was deenergized, an automatic scram would have occurred, which is analyzed in the plant Safety Analysis Report.

TABLE 1

| System/Component | Design Response |
|---|----------------------|
| Reactor Building Heating, Ventilating, Air Conditioning (HVAC) System (EIIS/VA) | Automatic Isolation |
| Reactor Building Standby Gas Treatment (SBGT) System (EIIS/BH) | Automatic Initiation |
| Primary Containment Isolation System (PCIS) (EIIS/JM) Division 1 Valve Groups 2, 6, and 8 | Automatic Isolation |
| PCIS (A logic) Group 1 | Automatic Isolation |
| RPS A Lugic Scram | Automatic Initiation |

NRC FORM 366A

NRC Form 366A

USNRC-DS MR1 SEP -2 A 9 52 1 . . .



Carolina Power & Light Company

Erunswick Steam Electric Plant P. O. Box 10429 Southport, NC 28461-0429 August 20, 1987

FILE: B09-13510C SERIAL: BSEP/87-0952

NRC Document Control Desk U.S. Nuclear Regulatory Commission Washington, DC 20555

> ERUNSWICK STEAM ELECTRIC PLANT UNIT 2 DOCKET NO. 50-324 LICENSE NO. DPR-62 LICENSEE EVENT RE.ORT 2-87-008

Gentlemen:

In accordance with Title 10 to the Code of Federal Regulations, the enclosed Licensee Event Report is submitted. This report fulfills the requirement for a written report within thirty (30) days of a reportable occurrence and is in accordance with the format set forth in NUREG-1022, September 1983.

Very truly yours.

SAP-Birling For

C. R. Dietz, General Manager Brunswick Steam Electric Plant

MJP/mcg

Enclosure

cc: Dr. J. N. Grace

IE 22

10CFR50.73