

NRC FORM 366		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92	
<h2 style="margin: 0;">LICENSEE EVENT REPORT (LER)</h2>				ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC. 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC. 20503.	
Facility Name (1)				Docket Number (2)	
COMANCHE PEAK-UNIT 2				05000446	
Title (4)				Page (3)	
LABELING ERROR LEADING TO INOPERABILITY OF THE POWER RANGE INSTRUMENTATION				1 OF 6	
Event Date (5)		LER Number (6)		Report Date (7)	
Month	Day	Year	Sequential Number	Revision Number	Month Day Year
11	24	94	022	01	05 19 95
Operating Mode (9)		Other Facilities Involved (8)			
1		Facility Names: N/A Docket Numbers: 05000446			
Power Level (10)		This report is submitted pursuant to the requirements of 10 CFR § (Check one or more of the following) (11)			
0115		<input type="checkbox"/> 20.402(b) <input type="checkbox"/> 20.405(a)(1)(i) <input type="checkbox"/> 20.405(a)(1)(ii) <input type="checkbox"/> 20.405(a)(1)(iii) <input type="checkbox"/> 20.405(a)(1)(iv) <input type="checkbox"/> 20.405(a)(1)(v) <input type="checkbox"/> 20.405(c) <input type="checkbox"/> 50.36(c)(1) <input type="checkbox"/> 50.36(c)(2) <input checked="" type="checkbox"/> 50.73(a)(2)(i) <input type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(iv) <input type="checkbox"/> 50.73(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(vi) <input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(ix)			
Licensee Contact For This LER (12)					
Name				Area Code Telephone Number	
S. L. ELLIS, I&C MAINTENANCE MANAGER				817-897-8422	
Complete One Line For Each Component Failure Described in This Report (13)					
Cause	System	Component	Manufacturer	Reportable To NPRDS	
				N	
Supplemental Report Expected (14)					
<input type="checkbox"/> Yes (if yes, complete Expected Submission Date)				<input checked="" type="checkbox"/> No	
Expected Submission Date (15)				Month Day Year	
Abstract (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)					
<p>On November 24, 1994, at approximately 11:00 a.m., during Unit 2 power ascension channel N-41 Axial Flux Difference (AFD) indicated approximately 2 percent lower than channels N-42, 43, and 44 at 15 percent of Rated Thermal Power. Reactor Engineering personnel (utility, nonlicensed) reviewed this issue, in conjunction field verification by I&C Technicians (utility, nonlicensed) identified that cable connections of channel N-41 had been physically reversed due to labeling differences. Corrective action was to reinstall the cables in accordance with the design.</p>					

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC. 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC. 20503.

Facility Name (1)	Docket Number (2)	LER Number (6)			Page (3)		
COMANCHE PEAK-UNIT 2	01510101041416	Year	Sequential Number	Revision Number			
		914	- 01212	- 011	2	2F	6

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

I. DESCRIPTION OF THE REPORTABLE EVENT

A. REPORTABLE EVENT CLASSIFICATION

Any operation or condition prohibited by Technical Specifications.

B. PLANT CONDITIONS PRIOR TO THE EVENT

On November 24, 1994, Comanche Peak Steam Electric Station (CPSES) Unit 2 was in Mode 1, Power Operation, with the reactor at approximately 15 percent of Rated Thermal Power.

C. STATUS OF STRUCTURES, SYSTEMS OR COMPONENTS THAT WERE INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT

Channel one Delta-I input to the AFD monitor alarm and overtemperature N-16 were determined to be inoperable.

D. NARRATIVE SUMMARY OF THE EVENT, INCLUDING DATES AND APPROXIMATE TIMES

On November 24, 1994, Power Range Module 2-NY-0041 for channel N-41 was replaced due to repeated fuse problems.

On November 24, 1994, at approximately 11:00 a.m., during Unit 2 power ascension, channel N-41 AFD indicated lower than channels 42, 43, and 44 at 15 percent of Reactor Thermal Power (RTP). Reactor Engineering personnel discussions with the Unit 2 Reactor Operator (utility, licensed) indicated that channel 41 had been responding opposite to channels 42, 43, and 44. This prompted Reactor Engineering (utility, nonlicensed) to request I&C technicians (utility, nonlicensed) to verify proper cable configurations of channel N-41. Upon further investigation, it was discovered that the cables to the power module output connectors were installed in reverse orientation due to labeling differences.

On November 29, 1994, during an engineering review of this event it was deemed that this event was a violation of CPSES Technical Specifications, 4.2.1.1b; and was reportable pursuant to the requirements of 10CFR50.73(a)(2)(i).

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC. 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC. 20503.

Facility Name (1)	Docket Number (2)	LER Number (6)			Page (3)		
COMANCHE PEAK-UNIT 2	0510101446	Year	Sequential Number	Revision Number			
		94	022	01	3	CF	6

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

E. THE METHOD OF DISCOVERY OF EACH COMPONENT OR SYSTEM FAILURE, OR PROCEDURAL OR PERSONNEL ERROR

Unit 2 Reactor Operator noted that channel N-41 AFD was indicating approximately 2 percent lower than channels 42, 43, and 44. Upon investigation by I&C Technicians it was discovered that the cables were reversed at Power Range Module 2-NY-0041.

II. COMPONENT OR SYSTEM FAILURES

A. FAILURE MODE, MECHANISM, AND EFFECT OF EACH FAILED COMPONENT

No failed components contributed to this event.

B. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE

No failed components contributed to this event.

C. SYSTEMS OR SECONDARY FUNCTIONS THAT WERE AFFECTED BY FAILURE OF COMPONENTS WITH MULTIPLE FUNCTIONS

No failed components contributed to this event.

D. FAILED COMPONENT INFORMATION

No failed components contributed to this event.

III. ANALYSIS OF THE EVENT

A. SAFETY SYSTEM RESPONSES THAT OCCURRED

No safety systems responded, or were expected to respond, during this event.

B. DURATION OF SAFETY SYSTEM TRAIN INOPERABILITY

The potential for inoperability existed from 2:10 a.m. November 24, 1994, until the cables in Power Range Module 2-NY-0041 were swapped and the channel was returned to service on November 24, 1994, at 2:00 p.m.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC. 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC. 20503.

Facility Name (1)

Docket Number (2)

LER Number (3)

Page (3)

COMANCHE PEAK-UNIT 2

051010104416

Year

Sequential

Revision

Number

Number

-

022

-

011

4

OF

6

Text (if more space is required, use additional NRC Form 365A's) (17)

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

The AFD signal is derived from the top Power Range detector signal (qt) and the bottom Power Range detector signal (qb). The difference between qt - qb or delta q provides one of the inputs for over temperature (OT) N-16 core protection to prevent DNB along with combinations of pressure, power, and coolant temperature. If axial peaks are greater than allowed as indicated by the difference between top and bottom power range nuclear detectors, this Reactor Trip is automatically reduced. For Unit 2 this is when the magnitude of qt - qb is -52 percent or +5.5 percent. These limits were never approached as delta q for this channel indicated -2 percent and in actuality was 0 percent; therefore, no adverse safety consequences resulted. The target band AFD for Unit 2 this cycle was +3 percent to -12 percent. Though channel one of NIS Delta-1 indicated 2 percent lower than the other channels which were approximately 0 percent, this erroneous indication was still within the target band along with the other channels. Therefore no adverse safety consequences resulted since no violation of the target band was observed. It is concluded that the event did not adversely affect the safe operation of CPSES Unit 2 or the health and safety of the public.

IV. CAUSE OF THE EVENT

Initially, TU Electric reported that "[T]he output connectors of the power range module being removed were labeled by the manufacturer differently from the power range module being installed". However, further investigation revealed that during Start-up system testing (5/25/84), a Field Deficiency Report (FDR) was issued by the power range vendor, to document that, the labeling on the power range modules was incorrect for the shared outputs (i.e., top is labeled bottom and bottom is labeled top). The recommended actions were for TU Electric to relabel the modules to conform with the "as-built conditions". In addition, a note in the disposition section of the FDR stated that changes to the affected drawings would occur on the next revision.

The relabeling of the power range modules for Unit 1 was accomplished, but the drawings were not revised. The FDR was subsequently closed on July 10, 1984. An additional FDR was written to document the same condition in Unit 2 and prompt a similar corrective action to relabel the power supplies. Nonetheless, TU Electric believes that this additional Unit 2 FDR was not issued and similar disposition was not implemented. Thus, causing the power range modules between the units to be labeled opposite each other (Unit 1 - "top" on left, "bottom" on right - Unit 2 - "bottom" on left, "top" on right).

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC. 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC. 20503.

Facility Name (1)

Docket Number (2)

LER Number (6)

Page (3)

COMANCHE PEAK-UNIT 2

01510101041416

Year

Sequential

Revision

Number

Number

-

-

914

01212

011

5

OF

6

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

In January of 1989, a Unit 1 power range module (Channel 1-NY-0043) was found to be malfunctioning and had to be replaced. This power range module on channel N-43 was replaced. (Its labels had already been changed to correspond to the proper designations in accordance with the Unit 1 FDR). This module was subsequently sent to the vendor for refurbishment and was returned to CPSES as a spare. This was the power range module which was used as a replacement for the Unit 2 module (2-NY-0041). The output connectors of the power range module being removed ("old" module), were labeled differently from the replacement module ("new" module). The old power range module had the output connectors labeled as "bottom" for the connector on the left, and as "top" for the connector on the right as viewed from the front. The new power range module had "top" on the left and "bottom" on the right. This labeling discrepancy led the installation crew to install the field cables in the 'as labeled' condition, with the cable going to the "old" right connector to the new left connector, etc.

V. CORRECTIVE ACTIONS

Corrective actions were to reinstall cables in their proper orientation. Spare modules in the warehouse were inspected to determine correct labeling of the terminals. Technicians were trained on this event as lessons learned.

To prevent recurrence, TU Electric has relabeled the power range modules in the warehouse to be consistent with design.

Moreover, each of the causes were examined individually to assess the generic implications related to this event. A search of historical data was conducted in an attempt to identify the occurrence of similar events. No similar matters of concern were identified. It was deemed that, during the continued operation of the plant no other cases of this type have been identified. For this reason, this issue is considered an isolated case. TU Electric believes that, no additional actions related to generic implications are warranted.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC. 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC. 20503.

Facility Name (1)

Docket Number (2)

LER Number (6)

Page (3)

COMANCHE PEAK-UNIT 2

0510101446

Year	Sequential Number	Revision Number
94	022	01

6 OF 6

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

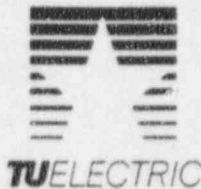
VI. PREVIOUS SIMILAR EVENTS

There have been no previous similar events reported pursuant to 10CFR50.73.

VII. ADDITIONAL INFORMATION

All times reported are approximate central standard time.

ENCLOSURE TO TXX-95140



Log # [REDACTED]
File # 10200
Ref. # 10CFR50.73(a)(2)(i)

December 29, 1994

C. Lance Terry
Group Vice President

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES) - UNIT 2
DOCKET NO. 50-446
CONDITION PROHIBITED BY TECHNICAL SPECIFICATION
LICENSEE EVENT REPORT 446/94-022-00

Gentlemen:

Enclosed is Licensee Event Report (LER) 94-022-00 for Comanche Peak Steam Electric Station Unit 2, "Labeling Error Leading to Inoperability of the Power Range Instrumentation."

Sincerely,

A handwritten signature in cursive script, appearing to read 'C. L. Terry'.
C. L. Terry

OB/bm
Enclosure

c - Mr. L. J. Callan, Region IV
Mr. D. D. Chamberlain, Region IV
NRC Resident Inspectors, CPSES

9501050231 600

NRC FORM 366		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92	
<h2 style="margin: 0;">LICENSEE EVENT REPORT (LER)</h2>				ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC. 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC. 20503.	
Facility Name (1)				Docket Number (2)	
COMANCHE PEAK-UNIT 2				05000446	
Title (4)				Page (3)	
LABELING ERROR LEADING TO INOPERABILITY OF THE POWER RANGE INSTRUMENTATION				1 OF 5	
Event Date (5)		LER Number (6)		Report Date (7)	
Month	Day	Year	Year	Sequential Number	Revision Number
11	24	94	94	022	00
Other Facilities Involved (8)		Facility Names			
		N/A			
		N/A			
Operating Mode (9)		This report is submitted pursuant to the requirements of 10 CFR § (Check one or more of the following) (11)			
1		<input type="checkbox"/> 20.402(b) <input type="checkbox"/> 20.405(c) <input type="checkbox"/> 50.73(a)(2)(iv) <input type="checkbox"/> 73.71(b) <input type="checkbox"/> 20.405(a)(1)(i) <input type="checkbox"/> 50.36(c)(1) <input type="checkbox"/> 50.73(a)(2)(v) <input type="checkbox"/> 73.71(c) <input type="checkbox"/> 20.405(a)(1)(ii) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.73(a)(2)(viii) <input type="checkbox"/> Other (Specify in Abstract below and in Text, NRC Form 366A) <input type="checkbox"/> 20.405(a)(1)(iii) <input checked="" type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 20.405(a)(1)(iv) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 20.405(a)(1)(v) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(ix)			
Power Level (10)		Licensee Contact For This LER (12)			
0115		Name: S. L. ELLIS, I&C MAINTENANCE MANAGER Area Code: 817 Telephone Number: 817-897-8422			
Complete One Line For Each Component Failure Described in This Report (13)					
Cause	System	Component	Manufacturer	Reportable To NPRDS	
				N	
Supplemental Report Expected (14)					Expected Submission Date (15)
<input type="checkbox"/> Yes (If yes, complete Expected Submission Date)					<input checked="" type="checkbox"/> No
Abstract (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)					
<p>On November 24, 1994, at approximately 11:00 a.m., during Unit 2 power ascension channel N-41 Axial Flux Difference (AFD) indicated approximately 2 percent lower than channels N-42, 43, and 44 at 15 percent of Rated Thermal Power. Reactor Engineering personnel (utility, nonlicensed) reviewed this issue, in conjunction field verification by I&C Technicians (utility, nonlicensed) identified that cable connections of channel N-41 had been physically reversed due to labeling differences. Corrective action was to reinstall the cables in accordance with the design.</p>					

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC. 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC. 20503.

Facility Name (1)	Docket Number (2)	LER Number (6)				Page (3)	
COMANCHE PEAK-UNIT 2	0151010141416	Year	Sequential Number	Revision Number			
		9/4	- 022	- 010	2	OF	5

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

I. DESCRIPTION OF THE REPORTABLE EVENT

A. REPORTABLE EVENT CLASSIFICATION

Any operation or condition prohibited by Technical Specifications.

B. PLANT CONDITIONS PRIOR TO THE EVENT

On November 24, 1994, Comanche Peak Steam Electric Station (CPSES) Unit 2 was in Mode 1, Power Operation, with the reactor at approximately 15 percent of Rated Thermal Power.

C. STATUS OF STRUCTURES, SYSTEMS OR COMPONENTS THAT WERE INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT

Channel one Delta-I input to the AFD monitor alarm and overtemperature N-16 were determined to be inoperable.

D. NARRATIVE SUMMARY OF THE EVENT, INCLUDING DATES AND APPROXIMATE TIMES

On November 24, 1994, Power Range Module 2-NY-0041 for channel N-41 was replaced due to repeated fuse problems.

On November 24, 1994, at approximately 11:00 a.m., during Unit 2 power ascension, channel N-41 AFD indicated lower than channels 42, 43, and 44 at 15 percent of Reactor Thermal Power (RTP). Reactor Engineering personnel discussions with the Unit 2 Reactor Operator (utility, licensed) indicated that channel 41 had been responding opposite to channels 42, 43, and 44. This prompted Reactor Engineering (utility, nonlicensed) to request I&C technicians (utility, nonlicensed) to verify proper cable configurations of channel N-41. Upon further investigation, it was discovered that the cables to the power module output connectors were installed in reverse orientation due to labeling differences.

On November 29, 1994, during an engineering review of this event it was deemed that this event was a violation of CPSES Technical Specifications, 4.2.1.1b; and was reportable pursuant to the requirements of 10CFR50.73(a)(2)(i).

NRC FORM 366A U.S. NUCLEAR REGULATORY COMMISSION <h2 style="margin: 10px 0;">LICENSEE EVENT REPORT (LER) TEXT CONTINUATION</h2>		APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92 <small>ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC. 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC. 20503.</small>																
Facility Name (1) COMANCHE PEAK-UNIT 2	Docket Number (2) 015101010446	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3" style="text-align: center;">LER Number (6)</th> <th colspan="2" style="text-align: center;">Page (3)</th> </tr> <tr> <th style="width: 15%;">Year</th> <th style="width: 25%;">Sequential Number</th> <th style="width: 15%;">Revision Number</th> <th style="width: 15%;"></th> <th style="width: 30%;"></th> </tr> <tr> <td style="text-align: center;">94</td> <td style="text-align: center;">- 01212</td> <td style="text-align: center;">- 010</td> <td style="text-align: center;">3</td> <td style="text-align: center;">OF 5</td> </tr> </table>		LER Number (6)			Page (3)		Year	Sequential Number	Revision Number			94	- 01212	- 010	3	OF 5
LER Number (6)			Page (3)															
Year	Sequential Number	Revision Number																
94	- 01212	- 010	3	OF 5														

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

E. THE METHOD OF DISCOVERY OF EACH COMPONENT OR SYSTEM FAILURE, OR PROCEDURAL OR PERSONNEL ERROR

Unit 2 Reactor Operator noted that channel N-41 AFD was indicating approximately 2 percent lower than channels 42, 43, and 44. Upon investigation by I&C Technicians it was discovered that the cables were reversed at Power Range Module 2-NY-0041.

II. COMPONENT OR SYSTEM FAILURES

A. FAILURE MODE, MECHANISM, AND EFFECT OF EACH FAILED COMPONENT

No failed components contributed to this event.

B. CAUSE OF EACH COMPONENT OR SYSTEM FAILURE

No failed components contributed to this event.

C. SYSTEMS OR SECONDARY FUNCTIONS THAT WERE AFFECTED BY FAILURE OF COMPONENTS WITH MULTIPLE FUNCTIONS

No failed components contributed to this event.

D. FAILED COMPONENT INFORMATION

No failed components contributed to this event.

III. ANALYSIS OF THE EVENT

A. SAFETY SYSTEM RESPONSES THAT OCCURRED

No safety systems responded, or were expected to respond, during this event.

B. DURATION OF SAFETY SYSTEM TRAIN INOPERABILITY

The potential for inoperability existed from 2:10 a.m. November 24, 1994, until the cables in Power Range Module 2-NY-0041 were swapped and the channel was returned to service on November 24, 1994, at 2:00 p.m.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC. 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC. 20503.

Facility Name (1)	Docket Number (2)	LER Number (6)			Page (3)	
COMANCHE PEAK-UNIT 2	0151010141416	Year	Sequential Number	Revision Number		
		914	- 01212	- 010	4	OF 5

Text (If more space is required, use additional NRC Form 365A's) (17)

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

The AFD signal is derived from the top Power Range detector signal (qt) and the bottom Power Range detector signal (qb). The difference between qt - qb or delta q provides one of the inputs for over temperature (OT) N-16 core protection to prevent DNB along with combinations of pressure, power, and coolant temperature. If axial peaks are greater than allowed as indicated by the difference between top and bottom power range nuclear detectors, this Reactor Trip is automatically reduced. For Unit 2 this is when the magnitude of qt - qb is -52 percent or +5.5 percent. These limits were never approached as delta q for this channel indicated -2 percent and in actuality was 0 percent; therefore, no adverse safety consequences resulted. The target band AFD for Unit 2 this cycle was +3 percent to -12 percent. Though channel one of NIS Delta-I indicated 2 percent lower than the other channels which were approximately 0 percent this erroneous indication was still within the target band along with the other channels. In actuality, this channel would have indicated 0 percent along with all of the other channels based on the actual upper and lower currents read at the NIS drawer. Therefore no adverse safety consequences resulted since no violation of the target band was observed. It is concluded that the event did not adversely affect the safe operation of CPSES Unit 2 or the health and safety of the public.

IV. CAUSE OF THE EVENT

The output connectors of the power range module being removed were labeled by the manufacturer differently from the power range module being installed. The old power range module which was replaced had the output connectors labeled as "bottom" for the connector on the left and as "top" for the connector on the right (as viewed from the front). The new power range module had "top" on the left and "bottom" on the right. In addition to these labels, the module identified the left connector as "J7" and the right connector as "J8". This labeling discrepancy caused the individual installing the new power module to put the cable number ER 240531 on the "bottom" connector and cable number ER240528 on the "top" connector, as this was the documented configuration that was removed from on the old module, even though their respective locations had been swapped.

NRC FORM 365A U.S. NUCLEAR REGULATORY COMMISSION <h2 style="text-align: center;">LICENSEE EVENT REPORT (LER) TEXT CONTINUATION</h2>		APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92 <small>ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC. 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC. 20503.</small>																			
Facility Name (1) COMANCHE PEAK-UNIT 2	Docket Number (2) 0151010141416	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3">LER Number (5)</th> <th colspan="2">Page (3)</th> </tr> <tr> <th>Year</th> <th>Sequential Number</th> <th>Revision Number</th> <th></th> <th></th> </tr> <tr> <td style="text-align: center;">94</td> <td style="text-align: center;">-</td> <td style="text-align: center;">022</td> <td style="text-align: center;">-</td> <td style="text-align: center;">010</td> </tr> </table>	LER Number (5)			Page (3)		Year	Sequential Number	Revision Number			94	-	022	-	010	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;">5</td> <td style="width: 10%; text-align: center;">OF</td> <td style="width: 10%; text-align: center;">5</td> </tr> </table>	5	OF	5
LER Number (5)			Page (3)																		
Year	Sequential Number	Revision Number																			
94	-	022	-	010																	
5	OF	5																			
<small>Text (if more space is required, use additional NRC Form 365A's) (17)</small>																					
<p>The I&C technicians who replaced the power range module 2-NY-0041 noted that the new module's output connectors positions appeared to be reversed. Also, additional labels were present on the output connectors which did not appear on the old module (i.e., J7 and J8). These labels correspond and are consistent with the identifying scheme used on the design drawing and are the correct labels for these connectors.</p>																					
<p>V. <u>CORRECTIVE ACTIONS</u></p> <p>Corrective actions were to reinstall cables in their proper orientation. Spare Power Range Modules in the warehouse were inspected to determine correct labeling of the terminals, one additional module found had both top and bottom markings on the outside, but was missing J7 and J8 labels internally. Individuals responsible for making the initial connection on the module were made aware of this event as lessons learned.</p> <p>Additionally, TU Electric is discussing the mislabeling issue with Power Range Module vendor, and will inform other utilities of this mislabelling event via the INPO Nuclear Network.</p> <p>To prevent recurrence TU Electric will relabel the Power Range Modules installed in both Units and the spares in the warehouse, to be consistent with design.</p>																					
<p>VI. <u>PREVIOUS SIMILAR EVENTS</u></p> <p>There have been no previous similar events reported pursuant to 10CFR50.73.</p>																					
<p>VII. <u>ADDITIONAL INFORMATION</u></p> <p>All times reported are approximate central standard time.</p>																					