Duke Energy®

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March 31, 2010

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: Duke Energy Carolinas, LLC (Duke)
Catawba Nuclear Station, Units 1 and 2
Docket Nos. 50-413 and 50-414
Licensee Event Report 413/2010-001

Attached is Licensee Event Report 413/2010-001, Revision 0 entitled, "Technical Specification Violation Associated with Failure to Perform Offsite Circuit Verification".

There are no regulatory commitments contained in this letter or its attachment.

This event is considered to be of no significance with respect to the health and safety of the public. If there are any questions on this report, please contact L.J. Rudy at (803) 701-3084.

Sincerely,

James R. Morris

LJR/s

Attachment

IE22
NRR

xc (with attachment):

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Master File CN-801.01
LER File
RGC Date File
NCMPA-1
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NRC FORM 366 (9-2007) | U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

APPROVED BY OMB: NO. 3150-0104 | EXPIRES: 08/31/2010

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Catawba Nuclear Station, Unit 1	05000 413	1 OF 7

4. TITLE

Technical Specification Violation Associated with Failure to Perform Offsite Circuit Verification

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
02	01	2010	2010	- 001 -	00	03	31	2010	Catawba Unit 2	05000 414
									FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE	1
10. POWER LEVEL	100%

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

	20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)
	20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)
	20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)
	20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)
	20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)		
	20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)		
	20.2203(a)(2)(v)	X	50.73(a)(2)(i)(B)		50.73(a)(2)(vii)		
	20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)		
	20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)		

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
L.J. Rudy, Regulatory Compliance	803-701-3084

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED			15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
	YES (If yes, complete 15. EXPECTED SUBMISSION DATE).	X NO				

16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On February 1, 2010, Technical Specification (TS) 3.8.1, "AC Power Sources - Operating" was violated for Units 1 and 2. The violation occurred following the racking out of a 6.9 kV bus tie breaker for preventive maintenance. Due to unclear TS Bases, plant personnel did not recognize that with the tie breaker racked out, one offsite circuit was inoperable. Licensed Operations personnel failed to adequately evaluate and perform the required actions associated with the inoperability of the offsite circuit in a timely manner. Surveillance Requirement (SR) 3.8.1.1 was not performed within one hour as required to verify that the other offsite circuit was operable. SR 3.8.1.1 was subsequently performed for both units and the tie breaker was subsequently racked back in, thereby restoring the inoperable offsite circuit to operable status. Planned corrective actions include enhancing the affected TS Bases. Throughout this event, all 4.16 kV Engineered Safety Feature buses remained energized and backed by available Diesel Generators. The health and safety of the public were not adversely affected by this event.

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Catawba Nuclear Station, Unit 1	05000413	2010	- 001 -	00	2 OF 7

NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

BACKGROUND

This event is being reported under the following criterion:

10 CFR 50.73(a)(2)(i)(B), any operation or condition which was prohibited by the plant's Technical Specifications.

Catawba Nuclear Station Units 1 and 2 are Westinghouse four-loop Pressurized Water Reactors (PWRs) [EIIS: RCT].

The unit Essential Auxiliary Power Distribution System [EIIS: EB] AC sources consist of the offsite power sources (normal and alternate), and the onsite standby power sources (Train A and Train B Diesel Generators (DGs) [EIIS: EK]). As required by 10 CFR 50, Appendix A, General Design Criterion 17, the design of the AC electrical power system provides independence and redundancy to ensure an available source of power to the Engineered Safety Feature (ESF) systems [EIIS: JE].

The onsite Class 1E AC Distribution System is divided into redundant load groups (trains) so that the loss of any one group does not prevent the minimum safety functions from being performed. Each train has connections to two preferred offsite power sources and a single DG.

From the transmission network, two electrically and physically separated circuits provide AC power, through step down station auxiliary transformers [EIIS: XFMR], to the 4.16 kV ESF buses [EIIS: BU]. A qualified offsite circuit consists of all breakers [EIIS: 52], transformers, switches [EIIS: IS], interrupting devices [EIIS: GFI], cabling [EIIS: CBL], and controls [EIIS: JC] required to transmit power from the offsite transmission network to the onsite Class 1E ESF bus(es).

The onsite standby power source for each 4.16 kV ESF bus is a dedicated DG. DGs A and B are dedicated to ESF buses ETA and ETB, respectively.

Two qualified circuits between the offsite transmission network and the onsite Essential Auxiliary Power System and separate and independent DGs for each train ensure availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an Anticipated Operational Occurrence or a postulated Design Basis

Accident.

TS Limiting Condition for Operation (LCO) 3.8.1 governs the AC sources while in Modes 1, 2, 3, and 4. LCO 3.8.1 requires two offsite circuits and two DGs to be operable for each unit. With one offsite circuit inoperable, Condition A allows for continued operation for up to 72 hours. Additionally, Surveillance Requirement (SR) 3.8.1.1 (verify correct breaker alignment and indicated power availability for each offsite circuit) must be performed for the operable offsite circuit within 1 hour and once per 8 hours thereafter.

SR 3.8.1.8 (verify automatic and manual transfer of AC power sources from the normal offsite circuit to each alternate offsite circuit) is required to be performed every 18 months. Transfer of each 4.16 kV ESF bus power supply from the normal offsite circuit to the alternate offsite circuit demonstrates the capability of the alternate circuit distribution network to power the shutdown loads. The alternate circuit distribution network consists of an offsite power source through a 6.9 kV bus incoming breaker, its associated 6.9 kV bus tie breaker, and the aligned 6.9/4.16 kV transformer to the essential bus. The requirement of this SR is the transfer from the normal offsite circuit to the alternate offsite circuit via the automatic and manual actuation of the 6.9 kV bus tie breaker and 6.9 kV bus incoming breakers upon loss of the normal credited offsite source.

The following table depicts the relationship between the offsite circuits, the tie breakers, and the ESF buses supported for Unit 1 and Unit 2.

Offsite Circuit	Tie Breaker	ESF Bus Supported
1A	N/A	Normal to 1ETA
	1TD7	Alternate to 1ETB
1B	N/A	Normal to 1ETB
	1TA7	Alternate to 1ETA
2A	N/A	Normal to 2ETA
	2TD7	Alternate to 2ETB
2B	N/A	Normal to 2ETB
	2TA7	Alternate to 2ETA

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Catawba Nuclear Station, Unit 1	05000413	2010	- 001 -	00	4 OF 7

NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

On February 1, 2010, when this event occurred, Units 1 and 2 were in Mode 1 at 100% power operation.

EVENT DESCRIPTION

(Certain event times are approximate.)

Date/Time	Event Description
02/01/10/0445	Tie breaker 1TA7 was racked out for preventive maintenance.
1130	Preventive maintenance work was recognized by Operations as being complete.
1320	Operations experienced difficulty racking 1TA7 back in.
1618	Work request written concerning the difficulty experienced racking 1TA7 back in.
~1730-1745	Operations and Regulatory Compliance discussed the implication of 1TA7 being racked out on operability. It was noted that since SR 3.8.1.8 was not met with 1TA7 racked out, that LCO 3.8.1 was not met.
~1830	Offsite circuit 1A was declared inoperable.
1938	SR 3.8.1.1 was performed for Unit 1.
~2210	1TA7 was racked in.
02/02/10/~0030	Operations logged the inoperability into the Technical Specification Action Item Log (TSAIL) and noted the impact on Unit 2. SR 3.8.1.1 was subsequently performed for Unit 2.

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Catawba Nuclear Station, Unit 1	05000413	2010	- 001 -	00	5 OF 7

NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

CAUSAL FACTORS

The root cause of this event was that the TS Bases for SR 3.8.1.8 are unclear in relation to the design basis requirements for the 6.9 kV bus tie breakers. This is a legacy issue and the lack of clarity subsequently led to a lack of understanding of the importance of the tie breakers by various plant groups.

The TS Bases for SR 3.8.1.8 do not delineate which offsite circuit is to be considered inoperable if a particular tie breaker is incapable of performing its function. Additionally, there is no design basis document information available related to this issue. From a review of design documents, this lack of clarity dates back to the original design of the system and to the documentation of the TS SR Bases. This lack of clarity has therefore affected the operational control of the tie breakers since 1996 (refer to the last paragraph of this section).

Once it was recognized that an offsite circuit was inoperable, SR 3.8.1.1 was not performed within one hour as required by TS 3.8.1, Required Action A.1. Due to multiple ongoing activities, licensed Operations personnel failed to adequately evaluate and perform the required actions associated with the inoperability of the 1A offsite circuit in a timely manner. Additionally, personnel failed to adequately apply 1TA7's cascading effects to Unit 2. (The cascading effects result from the fact that Catawba has two safety related shared motor control centers, one for each train, which can be powered from either unit and which support the operation of certain shared safety related equipment.) Timely application of these cascading effects would have led to verification of the operable offsite circuit within the one-hour time limit.

Events similar to this could have potentially occurred at Catawba as far back as 1996. In 1996, the preventive maintenance work on the 6.9 kV bus tie breakers was moved from outage to innage with a five-year maintenance frequency. Prior to 1996, work on these tie breakers would have occurred during the respective unit outage(s); therefore, this event was not considered to have been a credible occurrence prior to 1996.

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Catawba Nuclear Station, Unit 1	05000413	2010	- 001 -	00	6 OF 7

NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

CORRECTIVE ACTIONS

Immediate:

1. Tie breaker 1TA7 was racked in, thereby restoring operability to the affected offsite circuit.

2. Plant personnel verified that the breaker issue had no impact on the overall plant risk profile.

3. A comment was placed within the tagging system to alert plant personnel as to the importance of the tie breakers relative to offsite circuit operability.

Subsequent:

1. A lessons learned communication was provided to all shift Operations personnel concerning this event.

2. PT/1,2/A/4350/003, "Electrical Power Source Alignment Verification" were revised to add a weekly check of the applicable tie breakers being racked in and open. Information was also added regarding the critical nature of the tie breakers.

3. OP/0/A/6350/010, "Operation of Station Breakers and Disconnects" was revised to add information regarding the tie breakers and their relevance to TS 3.8.1.

Planned:

1. The TS Bases for SR 3.8.1.8 will be revised to clarify the design basis of the offsite circuits and the relationship to the tie breakers.

2. The Design Basis Document for the 4.16 kV Essential Auxiliary Power System will be revised to include a clear design basis for the tie breakers.

There are no NRC commitments contained in this LER.

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Catawba Nuclear Station, Unit 1	05000413	2010	- 001 -	00	7 OF 7

NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

SAFETY ANALYSIS

There was no safety significance to this event. At no time was offsite power lost to either of the 4.16 kV ESF buses ETA or ETB. With the tie breaker removed from service, the only adverse effect upon the plant was the inability to comply with SR 3.8.1.8. Although SR 3.8.1.1 was performed late, the surveillance demonstrated that the required offsite circuits were, in fact, operable. Also, both train's DGs remained available throughout this event, thereby ensuring that standby emergency power was available to the ESF buses, had it been required.

The health and safety of the public were not adversely affected by this event.

ADDITIONAL INFORMATION

Within the previous three years, there were no LER events involving the failure to perform SR 3.8.1.1 within one hour as required by TS 3.8.1. Therefore, this event is considered to be non-recurring.

Energy Industry Identification System (EIIS) codes are identified in the text as [EIIS: XX]. This event is not considered reportable to the Equipment Performance and Information Exchange (EPIX) program.

This event is not considered to constitute a Safety System Functional Failure. There was no release of radioactive material, radiation overexposure, or personnel injury associated with the event described in this LER.