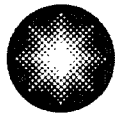


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Constellation Energy
Generation Group

September 22, 2006

U.S. Nuclear Regulatory Commission
Washington, DC 20555

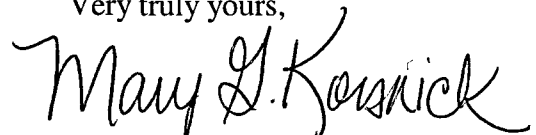
ATTENTION: Document Control Desk

SUBJECT: **R.E. Ginna Nuclear Power Plant**
Docket No. 50-244

LER 2006-003, Inoperability of Two Channels of Flow Instrumentation

The attached Licensee Event Report (LER) 2006-003 is submitted in accordance with 10 CFR 50.73, License Event Report System, item (a)(2)(i)(B). There are no new commitments contained in this submittal. Should you have questions regarding the information in this submittal, please contact Mr. Robert Randall at (585) 771-3734 or robert.randall@constellation.com.

Very truly yours,


Mary G. Korsnick

Attachments: (1) LER 2006-003

cc: S. J. Collins, NRC
P.D. Milano, NRC
Resident Inspector, NRC (Ginna)

1001646

FE22

LICENSEE EVENT REPORT (LER)(See reverse for required number of
digits/characters for each block)

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

R.E. Ginna Nuclear Power Plant

2. DOCKET NUMBER

05000 224

3. PAGE

1 OF 5

4. TITLE

Inoperability of Two Channels of Flow Instrumentation

5. EVENT DATE

MONTH	DAY	YEAR
07	25	2006

6. LER NUMBER

YEAR	SEQUENTIAL NUMBER	REV NO.
2006	- 003 -	00

7. REPORT DATE

MONTH	DAY	YEAR
09	22	2006

8. OTHER FACILITIES INVOLVED

FACILITY NAME	DOCKET NUMBER
	05000
FACILITY NAME	DOCKET NUMBER
	05000

9. OPERATING MODE

1

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

- | | | | |
|---|---|---|--|
| <input type="checkbox"/> 20.2201(b) | <input type="checkbox"/> 20.2203(a)(3)(i) | <input type="checkbox"/> 50.73(a)(2)(i)(C) | <input type="checkbox"/> 50.73(a)(2)(vii) |
| <input type="checkbox"/> 20.2201(d) | <input type="checkbox"/> 20.2203(a)(3)(ii) | <input type="checkbox"/> 50.73(a)(2)(ii)(A) | <input type="checkbox"/> 50.73(a)(2)(viii)(A) |
| <input type="checkbox"/> 20.2203(a)(1) | <input type="checkbox"/> 20.2203(a)(4) | <input type="checkbox"/> 50.73(a)(2)(ii)(B) | <input type="checkbox"/> 50.73(a)(2)(viii)(B) |
| <input type="checkbox"/> 20.2203(a)(2)(i) | <input type="checkbox"/> 50.36(c)(1)(i)(A) | <input type="checkbox"/> 50.73(a)(2)(iii) | <input type="checkbox"/> 50.73(a)(2)(ix)(A) |
| <input type="checkbox"/> 20.2203(a)(2)(ii) | <input type="checkbox"/> 50.36(c)(1)(ii)(A) | <input type="checkbox"/> 50.73(a)(2)(iv)(A) | <input type="checkbox"/> 50.73(a)(2)(x) |
| <input type="checkbox"/> 20.2203(a)(2)(iii) | <input type="checkbox"/> 50.36(c)(2) | <input type="checkbox"/> 50.73(a)(2)(v)(A) | <input type="checkbox"/> 73.71(a)(4) |
| <input type="checkbox"/> 20.2203(a)(2)(iv) | <input type="checkbox"/> 50.46(a)(3)(ii) | <input type="checkbox"/> 50.73(a)(2)(v)(B) | <input type="checkbox"/> 73.71(a)(5) |
| <input type="checkbox"/> 20.2203(a)(2)(v) | <input type="checkbox"/> 50.73(a)(2)(i)(A) | <input type="checkbox"/> 50.73(a)(2)(v)(C) | <input type="checkbox"/> OTHER |
| <input type="checkbox"/> 20.2203(a)(2)(vi) | <input checked="" type="checkbox"/> 50.73(a)(2)(i)(B) | <input type="checkbox"/> 50.73(a)(2)(v)(D) | Specify in Abstract below
or in NRC Form 366A |

10. POWER LEVEL

100

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME

Robert Randall, Director of Licensing

TELEPHONE NUMBER (Include Area Code)

(585) 771-3734

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☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE)☒ NO**15. EXPECTED
SUBMISSION
DATE**

MONTH	DAY	YEAR

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

On July 25, 2006 during the review of planned maintenance work packages, it was discovered that the Residual Heat Removal (RHR) to Safety Injection (SI) flow transmitters required by the Technical Specification post accident monitoring (PAM) instrumentation have as one of their power sources the opposite diesel generator train as the RHR pump whose flow they monitor. A potential loss of electrical power scenario could have caused a loss of the "A" RHR Pump and flow indication for the "B" RHR Pump. The same condition existed for the "B" RHR Pump and flow indication for the "A" RHR Pump. This condition had been in place since original plant design and construction.

This report is being made under 10CFR50.73(a)(2)(i)(B).

Corrective action to address the potential failure mode is outlined in Section V.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
R. E. Ginna Nuclear Power Plant	05000244	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 5
		2006	-- 003	-- 00	

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

I. PRE-EVENT PLANT CONDITIONS:

On July 25, 2006 during the performance of planned maintenance work package reviews, it was discovered that the Residual Heat Removal (RHR) to Safety Injection (SI) flow transmitters have as one of their power sources the opposite diesel generator train as the RHR pump whose flow they monitor. The flow transmitters provide for indication in the control room which is required by the Technical Specification post accident monitoring (PAM) instrumentation Limiting Condition for Operation (LCO) 3.3.3. A potential loss of electrical power scenario could have caused a loss of the "A" RHR Pump and flow indication for the "B" RHR Pump. The same condition existed for the "B" RHR Pump and flow indication for the "A" RHR Pump.

II. DESCRIPTION OF EVENT:

A. EVENT:

While performing planned maintenance work package reviews for the oncoming day shift, Operations personnel discovered that the RHR to SI flow transmitters, FT-931A and FT-931B, had as one of their electrical power sources the opposite diesel generator (DG) from the one that powered the RHR pump whose flow they monitor.

The RHR to SI flow transmitters provide indication in the control room for specific accidents where the RHR pumps are being utilized to provide a suction water source for the SI pumps and Containment Spray (CS) pumps. The normal suction water source for the SI and CS pumps is the refueling water storage tank (RWST).

FT-931A, "A" RHR to SI flow transmitter, was powered via 120v Instrument Bus "C", which has as one of it's three available power sources the "B" DG. FT-931B, "B" RHR to SI flow transmitter, was powered via 120v Instrument Bus "B", which has as one of it's two available power sources the "A" DG. During specific accident scenarios, a loss of electrical power from both offsite power and the "A" DG would result in a loss of the "A" RHR Pump and a loss (due to no battery backup) of FT-931B flow indication for the "B" RHR Pump. A loss of electrical power from both offsite power and the "B" DG would result in a loss of the "B" RHR Pump and could potentially result in a delayed loss (due to battery backup) of FT-931A flow indication for the "A" RHR Pump.

The condition was immediately communicated to the Shift Manager and a Condition Report was initiated. Engineering personnel were requested to review the issue and it was determined that both transmitters were inoperable. The requirements of Technical Specification LCO 3.3.3 were then entered. A modification was promptly initiated to correct the concern.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
R. E. Ginna Nuclear Power Plant	05000244	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 5
		2006	-- 003	-- 00	

17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)**B. INOPERABLE STRUCTURES, COMPONENTS, OR SYSTEMS THAT CONTRIBUTED TO THE EVENT:**

None

C. DATES AND APPROXIMATE TIMES OF MAJOR OCCURENCES:

- July 25, 2006, 0300 EDST: Event date and time: Operations shift personnel recognized flow transmitter electrical power source anomaly.
- July 25, 2006, 0300 EDST: Condition Report CR 2006-003090 was initiated.
- July 26, 2006, 1524 EDST: Modification to correct the flow transmitter wiring was completed.

D. OTHER SYSTEMS OR SECONDARY FUNCTIONS AFFECTED:

None, since there were no failures of any structures, systems, or components.

E. METHOD OF DISCOVERY:

The Operations shift was performing reviews of planned maintenance work packages prior to the upcoming day shift.

F. SAFETY SYSTEM RESPONSES:

Because there was no equipment failure, no safety systems were energized. This LER was initiated because of the potential for failure, rather than an actual failure.

III. CAUSE OF EVENT:

The Ginna AC instrument bus electrical power distribution subsystem consists of four 120 VAC instrument buses. The power source for one 120 VAC instrument bus (Instrument Bus D) is normally supplied from offsite power such that only three buses are considered safety related. These three 120 VAC instrument buses (A, B, and C) supply a source of power to instrumentation and controls which are used to monitor and actuate the Reactor Protection System (RPS) and Engineered Safety Features (ESF) and other components.

Instrument Buses A and C can be supplied power either from inverters which are powered from separate and redundant DC power sources, from offsite power, or from onsite standby AC power (diesel generators). Instrument Bus B can be supplied power from either offsite power or onsite standby AC power (diesel generator).

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
R. E. Ginna Nuclear Power Plant	05000244	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 5
		2006	-- 003	-- 00	

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

During prior reviews of Ginna instrumentation to determine whether the design met the intent of NRC Regulatory Guide (RG) 1.97, Instrumentation for Light-Water-Cooled Nuclear Power Plants to Access Plant and Environs Conditions During and Following an Accident, the electrical power sources for the instrumentation were evaluated for meeting the RG 1.97 guidance for dependability. For the RHR to SI flow transmitters, FT-931A and FT-931B, the determination of dependability was based on the electrical power sources being able to be supplied by an onsite diesel generator. Ginna attempted to meet the standards and design criteria at the time, or alternative standards. At the time of the review of the instrumentation, the importance of the interrelationship of the instrumentation, the monitored components, and the diesel generators was not recognized. This condition has been in place since original plant design and construction.

IV. ASSESSMENT OF THE SAFETY CONSEQUENCES OF THE EVENT:

This event is reportable in accordance with 10 CFR 50.73, Licensee Event Report System, item (a)(2)(i)(B), which requires a report of, "Any operation or condition which was prohibited by the plant's Technical Specifications."

The RHR pumps have two sets of flow transmitters, one set provides indication of flow to the reactor core (FT-626 and FT-689) following a Loss of Coolant Accident (LOCA), and the second set (FT-931A and FT-931B) provides indication of flow to the SI and CS pumps when using containment sump recirculation. The RHR indication for flow to the reactor core is unaffected by this event. The loss of the RHR to SI flow transmitters, FT-931A and FT-931B, would result in a potential loss of indication only. The flow transmitters do not provide an automatic control function.

The accident scenario in question only results from the following specific combination of events. The probability of this combination of events occurring simultaneously has been determined to be very low (on the order of approximately $4 \times 10^{-7}/\text{yr}$).

- a. A loss of offsite power occurs, which is not recoverable.
- b. A diesel generator failure occurs, which is not recoverable.
- c. A small break loss of coolant event occurs which eventually results in the need to initiate containment sump recirculation through the SI pumps and CS pumps.

Additionally, this event would not have prevented the pumps from performing their safety function of delivering flow. For the case of flow transmitter FT-931A, the DC battery backup for its instrument bus would provide for relatively long term availability of the indication. The reactor core parameters of pressure, temperature, and level and the containment pressure would still be available to the operators in the control room and are referenced in the emergency operating procedures.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
R. E. Ginna Nuclear Power Plant	05000244	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	5 OF 5
		2006	-- 003	-- 00	

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

V. CORRECTIVE ACTIONS:

A. ACTION TAKEN TO RETURN AFFECTED SYSTEMS TO PRE-EVENT NORMAL STATUS:

A modification was promptly initiated and completed to reconfigure the electrical power to flow transmitters FT-931A and FT-931B to align them with their respective RHR pump.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

A review has been performed of the electrical power sources for instrumentation listed in the UFSAR Table 7.5-1 as being classified as Regulatory Guide 1.97 Category 1. A further review of the remaining instruments is in progress. This is being tracked by the corrective action program.

VI. ADDITIONAL INFORMATION:

A. FAILED COMPONENTS:

No structures, systems, or components failed as result of this event.

B. PREVIOUS LERs ON SIMILAR EVENTS:

A similar LER event historical search was conducted with the following results: No documentation of similar LER events with the same root cause at Ginna Station could be identified.

C. THE ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIIS) COMPONENT FUNCTION IDENTIFIER AND SYSTEM NAME OF EACH COMPONENT OR SYSTEM REFERRED TO IN THIS LER:

COMPONENT	IEEE 803 FUNCTION NUMBER	IEEE 805 SYSTEM IDENTIFICATION
Pump	P	BE
Pump	P	BE
Pump	P	BQ
Flow Transmitter	FT	BP
Flow Transmitter	FT	BQ
Instrument Bus	BU	EF
Diesel Generator	DG	EK