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ROBERT C. MECREDDY
Vice President
Nuclear Operations

November 13, 2000

U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Guy S. Vissing
Project Directorate I
Washington, D.C. 20555

Subject: LER 2000-004, Two Fans Inoperable During Transition from Mode 5 to Mode 4,
Due to Personnel Error, Resulted in Condition Prohibited by Technical
Specifications
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Vissing:

The attached Licensee Event Report LER 2000-004 is submitted 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 prohibited by the plant's Technical Specifications".

Very truly yours,

Robert C. Mecreddy

xc: Mr. Guy S. Vissing (Mail Stop 8C2)
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
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1000214

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LICENSEE EVENT REPORT (LER)

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

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If 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.

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05000244

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TITLE (4)

Two Fans Inoperable During Transition from Mode 5 to Mode 4, Due to Personnel Error, Resulted in Condition Prohibited by Technical Specifications

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	14	2000	2000	- 004	- 00	11	13	2000		05000
									FACILITY NAME	DOCKET NUMBER
									FACILITY NAME	DOCKET NUMBER
									OTHER	
									Specify in Abstract below or in NRC Form 366A	

OPERATING MODE (9)

4

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

20.2201(b)		20.2203(a)(2)(v)	<input checked="" type="checkbox"/>	50.73(a)(2)(i)		50.73(a)(2)(viii)
20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		
20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		
20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME

John T. St. Martin - Technical Assistant

TELEPHONE NUMBER (Include Area Code)

(716) 771-3641

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)

YES

(If yes, complete EXPECTED SUBMISSION DATE).

X

NO

EXPECTED SUBMISSION DATE (15)

MONTH DAY YEAR

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

On October 14, 2000, at approximately 1745 EDST, the plant was shut down in Mode 4, having just transitioned from Mode 5 at 1514 EDST. A heatup was in progress, and reactor coolant system temperature was approximately 225 degrees F. It was discovered that two containment recirculation fan cooler fans were inoperable, and had been inoperable during the transition from Mode 5 to Mode 4. This condition is contrary to Ginna Station Improved Technical Specifications Limiting Condition for Operation 3.0.4.

The cause of having the two fans inoperable during the transition from Mode 5 to Mode 4 was personnel error.

Corrective action was to restore the two fans to operable status.

Corrective action to prevent recurrence is outlined in Section V.B.

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

I. PRE-EVENT PLANT CONDITIONS:

On October 10, 2000, preparations were being made to heat up the plant as the 2000 refueling outage was being completed. Normal operating procedure O-1.1C, "Plant Requirement Check List For Heatup Greater Than 200 Degrees Fahrenheit" was initiated at approximately 0143 EDST to verify all conditions needed for heatup above 200 degrees F (which is the transition from Mode 5 to Mode 4). One of the steps of procedure O-1.1C documents that all four containment recirculation fan cooler (CRFC) fans are operable. This step was signed off by an operator performing this check list procedure on October 10.

An issue involving a nonconforming condition in the containment building had been identified, and was included in the master list of actions to be completed prior to transitioning to Mode 4, as defined and controlled by plant administrative procedure A-80, "Startup Readiness Control". The resolution of this nonconforming condition required that caulking be performed in the containment building. On October 13, this caulking was scheduled to be performed. As a precaution against caulking fumes affecting the post-accident charcoal filters associated with the "A" and "C" containment recirculation fan cooler (CRFC) fans, a scheduler from the Outage Planning Group called the Operations Work Control Center (WCC), and verbally requested "holds" be put on the "A" and "C" CRFC fan switches on the Main Control Board (MCB). (The WCC is staffed by Operations personnel who establish isolated work zones (commonly referred to as "holds") for maintenance activities.) The A-80 tracking list tracked the need to resolve the nonconforming condition, and did not track the effect on the plant configuration related to startup readiness.

On October 13, 2000, at approximately 1425 EDST, the switches on the MCB for the "A" and "C" CRFC fans were placed in "pull-stop" and the holds were placed on these fans to protect the associated charcoal filters from chemical contamination during caulking in the containment building. At the time the holds were placed, it was intended that the holds would be released within the next several hours, after the caulk "cure" time had expired. After completion of the caulking, the mode restriction associated with this issue was released, and this issue was then removed from the A-80 tracking list without consideration of the cure time and hold removal from the two CRFC fans. The indicated completion time on the A-80 tracking list was premature, since the caulking cure time had not expired and the administrative hold on the "A" and "C" CRFC fans had not been released.

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II. DESCRIPTION OF EVENT:

A. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES:

- October 10, 2000: All four CRFC fans are verified operable.
- October 13, 2000, 1425 EDST: Two CRFC fans are removed from service.
- October 14, 2000, 1514 EDST: Event date and time.
- October 14, 2000, 1745 EDST: Discovery date and time.
- October 14, 2000, 1808 EDST: All four CRFC fans are operable.

B. EVENT:

On October 14, 2000, the plant was shut down in Mode 5, and being heated up in accordance with Normal Operating Procedure O-1.1, "Plant Heatup From Cold Shutdown to Hot Shutdown". A heatup of the reactor coolant system (RCS) was in progress, with RCS temperature less than 200 degrees F and pressurizer (PRZR) pressure at approximately 350 PSIG. The plant was "water-solid" at this time (no bubble in the pressurizer).

Heatup preparations continued throughout the morning. As part of the final signoffs for procedure O-1.1C, the Operations Manager called the WCC from the Control Room and instructed the licensed senior reactor operator (SRO) assigned to the WCC to review the Hold Book to verify that systems required prior to heatup above 200 degrees F were operable. The SRO in the WCC reviewed the Hold Book. The holds for the "A" and "C" CRFC fans were in the Hold Book during this review of holds. However, the SRO in the WCC did not recognize this as a condition for heatup, concluded that all systems required for heatup above 200 degrees F were operable, and reported back to the Operations Manager that systems required to be operable prior to heatup above 200 degrees F were operable. The Operations Manager then signed off the appropriate steps of procedure O-1.1C. Procedure O-1.1C was completed at approximately 1338 EDST and signed off by the Shift Supervisor. Upon completion of procedure O-1.1C, the Shift Supervisor signed off the applicable step in operating procedure O-1.1, "Plant Heatup From Cold Shutdown to Hot Shutdown", documenting that procedure O-1.1.C was complete. Procedure O-1.1 was then used to control the final actions needed prior to the transition to Mode 4.

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On October 14, 2000, at approximately 1745 EDST, the Control Room operators were performing procedure O-6.13 "Daily Surveillance Log" for Mode 1-2-3-4 conditions. During performance of this procedure, which includes verification of selected MCB switch, breaker and valve positions, the Control Room operators observed that the condensate dump valves for the CRFC fans were open. They questioned why these valves were open and why the "A" and "C" CRFC fan switches were in pull-stop on the MCB. In ensuing discussions, they realized that having the "A" and "C" CRFC fan switches in pull-stop does not satisfy the requirements of Ginna Station Improved Technical Specifications (ITS) Limiting Condition for Operation (LCO) 3.6.6 and ITS LCO 3.0.4.

ITS LCO 3.6.6 addresses operability requirements for the Containment systems, including containment spray (CS), CRFC, post-accident charcoal filters, and the CS spray additive (NaOH) systems. ITS LCO 3.6.6 is applicable in Modes 1, 2, 3 and 4 and states:

"Two CS trains, four CRFC units, two post-accident charcoal filter trains, and the NaOH system shall be OPERABLE."

ITS LCO 3.0.4 addresses mode changes and states:

"When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. Exceptions to this Specification are stated in the individual Specifications."

The Control Room operators then realized that Mode 4 had been entered without the required four CRFC fans operable per ITS LCO 3.6.6, which was a condition prohibited by ITS LCO 3.0.4. The Control Room operators initiated actions to remove the holds for these two fans. After the holds were removed, they operated the two CRFC fans and declared them operable, at approximately 1808 EDST on October 14.

C. INOPERABLE STRUCTURES, COMPONENTS, OR SYSTEMS THAT CONTRIBUTED TO THE EVENT:

None

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D. OTHER SYSTEMS OR SECONDARY FUNCTIONS AFFECTED:

None

E. METHOD OF DISCOVERY:

This condition was discovered by the Control Room operators during performance of procedure O-6.13 "Daily Surveillance Log". The Control Room operators concluded that Mode 4 had been entered without the required four CRFC fans operable, which was a condition prohibited by ITS LCO 3.0.4.

F. OPERATOR ACTION:

With the MCB switches for these fans in "pull-stop" during the transition from Mode 5 to Mode 4, the Control Room operators concluded that this configuration did not satisfy the requirements of ITS LCO 3.6.6 and ITS LCO 3.0.4. The Control Room operators initiated actions to remove the holds so that these two fans could be restored to operable status. Subsequently, the Control Room operators notified higher supervision.

G. SAFETY SYSTEM RESPONSES:

None. This condition does not meet the definition for the NRC Performance Indicator (PI) "Safety System Functional Failure" (SSFF), because both containment spray (CS) pumps were operable, two CRFCs were still operable, and the sodium hydroxide spray additive system (NaOH) was operable. In addition, the plant heat up was only a few degrees above the temperature for Mode 5, and the CRFC fans are not needed in Mode 5.

III. CAUSE OF EVENT:

A. IMMEDIATE CAUSE:

The immediate cause of being in a condition prohibited by Technical Specifications was not fully meeting the requirements of ITS LCO 3.6.6 during the transition from Mode 5 to Mode 4, since the "A" and "C" CRFC fans were considered inoperable in Mode 4 with their MCB switches in pull-stop.

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B. INTERMEDIATE CAUSE:

The intermediate cause of two fans being considered inoperable was the fans were held with MCB switches in pull-stop, and this condition was not recognized as prohibited by Technical Specifications during the transition from Mode 5 to Mode 4.

C. ROOT CAUSE:

The underlying cause of not recognizing this condition during the transition from Mode 5 to Mode 4 was personnel error. The organizational support established to ensure all pre-heatup requirements were satisfied was not adequately implemented. This error involved cognitive error and procedural error.

- Not recognizing that the actual plant condition (fan switches in pull-stop and held) was a condition prohibited by the plant's Technical Specifications was a cognitive error by the SRO performing the review of the Hold Book.
- Procedural controls were not adequate due to human factors deficiencies. The process that controlled the resolution of the nonconforming condition was not sufficiently prescriptive to ensure an effective notification for release of the hold.
- There was a misapplication of the A-80 tracking list. The A-80 tracked the need to resolve the nonconforming condition, and did not track the effect on the plant configuration related to startup readiness.

There were no unusual characteristics of the work locations that contributed to the errors.

IV. ANALYSIS OF 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 prohibited by the plant's Technical Specifications". During the transition from Mode 5 to Mode 4, having two CRFC fans inoperable is prohibited by the Technical Specifications.

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An assessment was performed considering both the safety consequences and implications of this event with the following results and conclusions:

There were no operational or safety consequences or implications attributed to having these two fans inoperable during the transition to Mode 4 because:

- Since the highest RCS temperature was at the time of discovery and was approximately 25 degrees F above the temperature for entry into Mode 4, the safety significance was minimal. In Modes 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these modes. Thus, the CS System, CRFC System, NaOH System, and the Post-Accident Charcoal System are not required to be operable in Modes 5 and 6.
- There is no credible condition under which the "A" and "C" CRFC fans would be required to function at these plant conditions. Due to plant conditions, automatic Safety Injection Actuation signals (SIAS) were blocked for low pressurizer pressure and low steam line pressure. Thus, the only automatic SIAS could have come from high containment pressure. However, with RCS temperature at approximately 225 degrees F, there is insufficient energy to increase containment pressure in the event of a steam line break or loss-of-coolant accident.
- The REQUIRED ACTIONs of ITS LCO were complied with. These actions allow the plant a considerable time to be in this condition before a required transition back to Mode 5:
 - REQUIRED ACTION for "Two post-accident charcoal filter trains inoperable".

C.1 Restore one post-accident charcoal filter train to OPERABLE status. 72 hours (With both post-accident charcoal filter trains inoperable, at least one post-accident charcoal filter train must be restored to OPERABLE status within 72 hours. The 72 hour Completion Time to restore one inoperable post-accident charcoal filter train is justified considering the redundant iodine removal capabilities afforded by the CS System and the low probability of a design basis accident (DBA) occurring during this time period. The inoperable post-accident charcoal filter train includes, but is not limited to inoperable CRFC units A and C.)

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- REQUIRED ACTION for "One or two CRFC units inoperable".
 - F.1 Declare associated post-accident charcoal filter train inoperable.
Immediately
 - AND
 - F.2 Restore CRFC unit(s) to OPERABLE status.
7 days

If these Required Action and associated Completion Times are not met, the ITS LCO REQUIRED ACTIONs require that the plant be in Mode 3 within the next 6 hours and be in Mode 5 in the next 84 hours.

Based on the above, it can be concluded that the public's health and safety was assured at all times.

V. CORRECTIVE ACTION:

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

The holds were removed from the two fans. The fans were operated and declared operable.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

NOTE: There are no NRC regulatory commitments in this Licensee Event Report.

- This event will be reviewed with all operating shifts this year, and again prior to the next refueling outage (currently planned for 2002).
- The need to perform a review of the Hold Book will be re-evaluated. Operations procedures which control plant mode changes will be evaluated, and revised as necessary, to include a configuration checklist which would be performed just prior to the plant mode change controlled by the procedure. The best approach from these evaluations will be adopted for controlling mode changes for future refueling outages.

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- The tracking list inputs will be reviewed, and revised as necessary, to enhance the control of work affecting plant configuration required for an upcoming mode change.

VI. ADDITIONAL INFORMATION:

A. FAILED COMPONENTS:

None

B. PREVIOUS LERs ON SIMILAR EVENTS:

An historical search of LERs was conducted with the following results: No documentation of similar LER events with the same root cause at Ginna Nuclear Power Plant could be identified.

C. SPECIAL COMMENTS:

None

D. IDENTIFICATION OF COMPONENTS REFERRED TO IN THIS LER:

COMPONENT	IEEE 803	IEEE 805
	FUNCTION	SYSTEM IDENTIFICATION
reactor coolant system		AB
containment spray pump	P	BE
CRFC	FAN	BK
containment	BLDG	NH