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ENERGY**

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

Perry Nuclear Power Plant
Docket No. 50-440
LER 94-019

Gentlemen:

Enclosed is Licensee Event Report 94-019 concerning Reactor Core Isolation Cooling System Secondary Containment Bypass Leakage.

If you have questions or require additional information, please contact Mr. James D. Kloosterman, Manager - Regulatory Affairs at (216) 280-5833.

Very truly yours,

RAS:DHL:sc

Enclosure: LER 94-019

cc: NRC Project Manager
NRC Resident Inspector Office
NRC Region III

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Operating Companies
Cleveland Electric Illuminating
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JE221

LICENSEE EVENT REPORT (LER)

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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS
INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD
COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION
AND RECORDS MANAGEMENT BRANCH (MNRB 7714), 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.FACILITY NAME (1)
Perry Nuclear Power Plant, Unit 1DOCKET NUMBER (2)
05000 440PAGE (3)
1 OF 4TITLE (4)
Reactor Core Isolation Cooling System Secondary Containment Bypass Leakage

EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
06	20	94	94	019	00	08	17	94		05000

OPERATING MODE (9)	POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 4: (Check one or more) (11)							
5	000	20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)	
		20.405(a)(1)(i)		50.36(c)(1)		X 50.73(a)(2)(v)		73.71(c)	
		20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		OTHER	
		20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in Abstract below and in Text, NRC Form 385A)	
		20.405(a)(1)(iv)		X 50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)			
		20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)			

LICENSEE CONTACT FOR THIS LER (12)
NAME: David H. Lockwood, Compliance Engineer
TELEPHONE NUMBER (include Area Code): (216) 280-7539

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRCDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRCDS

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)

An engineering review of the Reactor Core Isolation Cooling system (RCIC) design determined that credit for RCIC as a closed system outside containment relied upon the non-safety, non-seismic gland seal air compressor (GSAC). This design is not in compliance with the requirements of 10CFR50 Appendix A General Design Criteria. Therefore, leakage paths which are sealed by the GSAC can be considered as potential Secondary Containment Bypass Leakage paths. These paths were not previously accounted for in Secondary Containment Bypass Leakage totals.

Corrective action was to revise the Updated Safety Analysis Report and appropriate administrative procedures to identify the leakage paths as potential Secondary Containment Bypass Leakage.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Perry Nuclear Power Plant, Unit 1	05000 440	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		94	- 019 -	00	

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

I. Introduction

An engineering review of the Reactor Core Isolation Cooling system (RCIC) [BN] design determined that credit for RCIC as a closed system outside containment relied upon the non-safety, non-seismic gland seal air compressor (GSAC) [CMP]. This design is not in compliance with the requirements of 10CFR50 Appendix A General Design Criteria. Therefore, leakage paths which are sealed by the GSAC can be considered potential Secondary Containment Bypass Leakage paths. These paths were not previously accounted for in Secondary Containment Bypass Leakage totals. However, with the GSAC functioning leakage to the RCIC turbine would be contained.

A Reportability review was completed June 20, 1994 and determined that supplemental information should be submitted for time periods when the GSAC was known to be unavailable. These periods occurred during 1988. Further review determined that the potential Secondary Containment Bypass Leakage should be considered regardless of GSAC availability because of the non-safety, non-seismic design.

Violation of Technical Specification 3.6.1.2.d for Secondary Containment Bypass Leakage was previously reported by LER's 89-006-01, 90-026-01, 92-005-01 and 94-004. Therefore, this LER supplements the information previously reported. The potential bypass leakage from the RCIC system is in addition to previously calculated Secondary Containment Bypass Leakage totals.

II. Description of Event

The RCIC turbine casing and rotor shaft glands incorporate a seal system in which air under pressure is supplied to a header and piped to the turbine casing glands. Air is supplied by the RCIC gland seal air compressor [CMP]. Maintaining air pressure greater than steam pressure at the gland prevents leakage of steam from the shaft glands from reaching the atmosphere. An engineering review of the design requirements for the RCIC system determined that credit for RCIC being a closed system outside containment was based on the gland seal air compressor. The gland seal air compressor is a non-safety, non-seismic component and cannot be relied upon to ensure integrity of a closed system outside containment. Therefore, potential leakage paths to the RCIC turbine can be considered Secondary Containment Bypass Leakage. Note that whenever the GSAC is functioning, leakage to the RCIC turbine is in fact contained.

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

The potential leakage paths to the RCIC turbine are;

Description	Valve(s)	Primary Containment Penetration
RCIC Turbine Supply	E51-F0063 E51-F0064 E51-F0076	P422
RCIC Turbine Exhaust Isolation	E51-F0068	P106
RCIC Turbine Exhaust Vacuum Relief	E51-F0077 E51-F0078	P115
RHR A & B Relief Valve Discharge to Suppression Pool RCIC Turbine Exhaust Vacuum Relief	E12-F0102 E51-F0077	P429/P107

III. Cause of Event

The cause of this event is the failure of the licensing and design basis to adequately identify the reliance on the GSAC for integrity of the RCIC system as a closed system outside containment.

IV. Safety Analysis

Primary containment integrity ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates at the peak accident pressure assumed in the accident analyses limiting the site boundary radiation dose to within 10 CFR Part 100 criteria. As an added conservatism, the allowable overall integrated leakage is limited to less than or equal to 75 percent of the analyzed value to account for possible degradation of containment barriers between leakage tests. The analyzed leakage rate from Secondary Containment Bypass Leakage sources is .0672 La. The Technical Specification limit is .0504 La or 75% of the analyzed limit.

Since the GSAC can not be relied upon for integrity of a closed system outside containment, leakage through the identified penetrations is considered part of Secondary Containment Bypass Leakage. The four previous LER's discussed above, reported that Secondary Containment Bypass Leakage had been exceeded and the event was considered to be safety significant. The potential RCIC system leakage addressed in this LER would be in addition to that

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

previously reported and would not change the previous reported safety significance. However, the leakage would occur when the GSAC was not functioning.

V. Similar Events

LER 93-017 identifies a condition where potential leakage pathways for two containment penetrations were not considered resulting in inadequate testing. The corrective actions from LER 93-017 would not have identified the GSAC condition.

VI. Corrective Actions

To address the discovery of additional bypass leakage pathways, containment penetrations P106, P115, P422 and P429/P107 have been identified as potential Secondary Containment Bypass Leakage paths in the USAR and appropriate administrative procedures. This ensures that bypass leakage through the RCIC turbine from the subject penetrations will be accounted for in the event of an accident if the RCIC gland seal air compressor is not operable.

An engineering review has determined that no similar condition exists.

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].