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WISCONSIN PUBLIC SERVICE CORPORATION
600 North Adams • P.O. Box 19002 • Green Bay, WI 54307-9002

NRC-96-129

November 22, 1996

10 CFR 50.73

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

Ladies/Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Reportable Occurrence 96-007-00

In accordance with the requirements of 10 CFR 50.73, "Licensee Event Report System," the attached Licensee Event Report (LER) for reportable occurrence 96-007-00 is being submitted.

Sincerely,

M L Marchi

M. L. Marchi
Manager - Nuclear Business Group

KJS/jmf

Attach.

cc - INPO Records Center
US NRC Senior Resident Inspector
US NRC, Region III

IE22

030080

NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

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 (MNBB 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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Kewaunee Nuclear Power Plant	05000305	1 OF 4

TITLE (4) Design Deficiency in Containment Isolation Function Found During Operating Experience Assessment

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
									N/A	05000
10	23	96	96	-- 007 --	00	11	22	96	FACILITY NAME: N/A	DOCKET NUMBER: 05000

OPERATING MODE (9)	N
POWER LEVEL (10)	000

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

	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 366A)
	20.405(a)(1)(iv)		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	TELEPHONE NUMBER (Include Area Code)
Keith Schommer	(414) 388-2560

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

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

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

On October 23, 1996, with the plant in refueling shutdown, a design deficiency in the chemical and volume control system was identified. The deficiency was identified as a result of performing an operating experience assessment evaluation of a November 1994 Prairie Island LER.

The chemical and volume control system letdown line from the reactor coolant system has redundant containment isolation valves. The inboard isolation consists of 3 letdown orifice isolation valves in parallel, and the outboard isolation consists of a single valve. The residual heat removal (RHR) system is connected to the letdown line between the redundant containment isolation valves. This configuration is used for shutdown purification and overpressure protection of the RHR piping.

Failure of the outboard letdown line containment isolation valve in the open position would allow the RHR system to pump postaccident containment sump water into unevaluated locations of the chemical and volume control system within the auxiliary building. In this condition it may not be possible to fully implement all the emergency procedures within the assumed radiation dose levels.

Administrative controls will be implemented to preclude the above condition prior to plant start-up.

EVENT DESCRIPTION

On October 23, 1996, with the plant in refueling shutdown, a design deficiency in the chemical and volume control (CVC) system was identified. The deficiency was identified as a result of performing an operating experience assessment evaluation of a November 1994 Prairie Island LER. The assessment determined that a single containment isolation valve [ISV] failure could provide a path for postaccident containment sump water out of containment via the residual heat removal (RHR) system to letdown line.

The CVC system letdown line from the reactor coolant system has redundant containment isolation valves. The inboard isolation consists of 3 letdown orifice isolation valves in parallel, and the outboard isolation consists of a single valve. The RHR system is connected to the letdown line between the redundant containment isolation valves. This configuration is used for shutdown purification and overpressure protection of the RHR piping. (See attached figure.)

Failure of the outboard letdown line containment isolation valve in the open position would allow the RHR system to pump postaccident containment sump water to the letdown system outside of containment. Assuming no operator action, there is a potential to exceed the USAR offsite dose calculation values. Additionally, with contaminated water in the auxiliary building in locations other than those evaluated, it may not be possible to fully implement all the emergency procedures within the assumed radiation dose.

CAUSE OF THE EVENT

The cause of the event is an apparent oversight during original plant design.

ANALYSIS OF THE EVENT

The event is reportable pursuant to 10CFR50.73(a)(2)(v) since a single active failure could provide a path through the containment boundary. This event was also reported on October 23, 1996, in accordance with 10CFR50.72(b)(2)(I) as a degraded condition identified while shut down.

The current configuration of the letdown line and RHR line provides a possibility for a single failure to allow contaminated water to be pumped into unevaluated portions of the CVC system. The probability of a loss-of-inventory accident coincident with the failure of the outboard letdown line containment isolation valve to close is very low. In this condition operator action is needed to mitigate the postulated event. It is inconclusive whether operations personnel would have identified the leakage into the letdown system. The following indications are available to alert the operator of the flow of contaminated water into the auxiliary building:

1. Control board valve position lights
2. Containment isolation monitor lights - SI active status panel
3. Letdown line high radiation alarm
4. Letdown line flow indication

After discussing the system configuration with operations personnel it was determined that the indications in the control room are sufficient to allow the operator to diagnose and respond to the event. Alternate valves with remote control from the control room are available to redirect flow to analyzed portions of the CVC system.

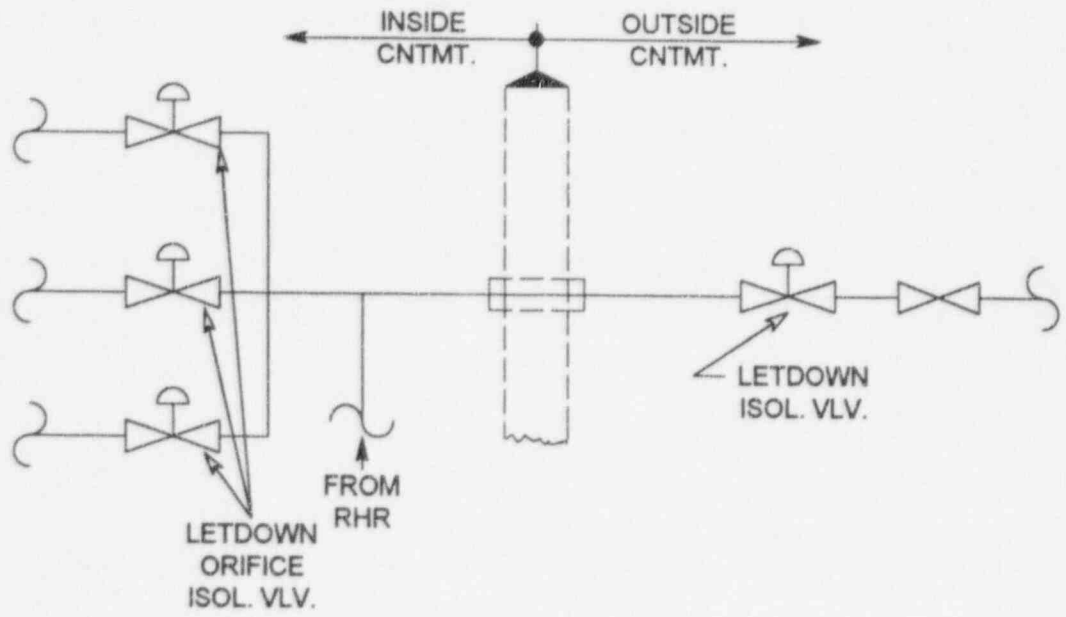
The letdown system is maintained in a leak tight condition which reduces the potential for any release to the outside environment. In addition, a calculation was performed which indicated a significant leak in the letdown line would need to exist to challenge 10 CFR 100 limits. Therefore, the possibility and consequences of the release of contaminated fluids to the environment are minimal.

CORRECTIVE ACTION

Administrative controls will be implemented to preclude the above condition prior to plant start-up.

ADDITIONAL INFORMATION

None.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