NRC Form 366 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
VERMONT YANKEE NUCLEAR POWER STATION	0 5 0 0 0 2 7 1	1 OF 0 3

TITLE (4)

POTENTIAL LOSS OF SGBT TRAIN DUE TO EXTENSION OF LOOP SEAL

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(S)	DOCKET NUMBER(S)
									N/A	0 5 0 0 0
0 4	1 7	8 8	8 8	0 0 5	0 1	0 5	2 7	8 8	N/A	0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	1 0 0	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 (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		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
JAMES P. PELLETIER, PLANT MANAGER	AREA CODE 8 0 2 2 5 7 - 7 7 1 1

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	
		N/A						N/A			
		N/A						N/A			

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 fifteen single-space typewritten lines) (16)

During 100% power operation on 04-17-88, an operator identified that the existing Tygon tubing had been replaced with tubing that had increased the vertical height of the drain loop seals for both Standby Gas Treatment (SBGT) trains (EIIS=BH). Followup by the operator revealed that excessive drain loop seal water column height could prevent the SBGT moisture separator from draining. The filling of the SBGT trains would result in a reduction of iodine adsorbtion by the activated charcoal beds. The tubing was repaired to return the loop seal water column to its original height.

It was determined that both trains would have operated normally and fulfilled the safety design basis function as stated in the FSAR. However, the "B" train would have been affected during Post-LOCA long term containment cleanup. Containment cleanup is a design feature of SBGT but not a safety design basis function.

The root cause could not be determined but a probable cause has been identified that led to the event.

The use of Tygon tubing on the SBGT drain loop seal will be evaluated per a Mechanical Bypass Request. A walkdown will be performed to assure that any other tubing being used in an operational configuration is documented and controlled. Plant personnel will be given specific training on this event.

In an attempt to identify the proper root cause and corrective action, an extension of 10 days was requested of and granted by the NRC Senior Resident Inspector.

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NRC Form 366A (9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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Vermont Yankee Nuclear Power Station	0 5 0 0 0 2 7 1	8 8	— 0 0 5	— 0 1	0 2 OF 0 3

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

DESCRIPTION OF EVENT

On 04-17-88, during 100% power operations, an operator identified that the existing Tygon tubing had been replaced with tubing that had increased the vertical height of the drain loop seals for both Standby Gas Treatment (SBGT) trains (EIIS=BH).

The original Tygon tubing increased the vertical height of the manufacturers loop seal just enough to allow the operators visible indication of water level in the hard piped loop seal. The original tubing has been in place since early plant operation. The tubing ended approximately 20" off the floor. It was installed because the original manufacturer's design did not provide the operators with loop seal level indication. The Tygon tubing was installed before the Mechanical Bypass Program existed. During the 1987 outage the tubing was replaced because it had become dirty and it was difficult to see loop seal level. The tubing was replaced without a Maintenance Request by two operators. The operators understood the significance of the loop seal and function of the drain. They remember leaving the end of each tubing at approximately the same height as the original tubing. On 4/17/88, the end of the drain tubing was found to be 30" off the floor for the "A" train and 36" for the "B" train.

After identifying the problem, Operations had the drain tubing corrected.

The evaluation of this event identified that the increased water column height would not have prevented either train from fulfilling its safety design basis function. However, the "B" train would have been affected during Post-LOCA long term containment cleanup. Containment cleanup is not a safety design basis function for SBGT. 1

In an attempt to identify the proper root cause and corrective action an extension of 10 days was requested of and granted by the NRC Senior Resident Inspector.

CAUSE OF EVENT

The exact root cause of this event could not be determined. However, it is felt that the following contributed to this event:

Human Factors - As identified during a review of this event, Tygon tubing is most commonly used as a temporary drain, to contain leakage, to drain equipment during maintenance and to assist in housekeeping. It is not normally considered to be plant equipment or have the capability of impacting plant equipment. When it was replaced, this human factor bias caused it to be treated as a "housekeeping item" instead of "plant equipment".

ANALYSIS OF EVENT

The VY FSAR states that the SBGT system shall:

1. Maintain a negative pressure in the Reactor Building so that any air leakage will be into the Reactor Building, and

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

ANALYSIS OF EVENT (Cont.)

2. Provide sufficient air filtration such that in the event of a design basis accident, release of gaseous contaminants will result in doses which are within the limits specified in 10 CFR 100.

The additional tubing height of the drain seal would not prevent the SBGT system from fulfulling its design basis as stated above. During a design basis accident, the secondary containment environment is analyzed as having higher than normal humidity which the SBGT system is designed for. The SBGT system uses a heating element to lower the relative humidity which minimizes the amount of water absorbed by the charcoal filters. Additionally, the SBGT units contain a demister which is designed to separate water spray/water particles and reduce water impingement of the charcoal beds. The demister drains to an internal drip pan which drains through a loop seal. Since the only time the demister could encounter suspended water particles is during a Post-LOCA primary containment environment (which is not a safety design basis), both units would have operated successfully if called upon to provide their intended function. Only the "B" train could have filled with water if deliberately lined up to the primary containment considering long term Post-LOCA environment. The demister drip pan could overfill from the combined effect of the additional water height and the vacuum pressure inside the "B" SBGT. The additional water then decreases the charcoal trays' effectiveness to remove iodine. Additionally, all other operating and surveillance modes were investigated to ensure that no water build up could occur. 1

CORRECTIVE ACTION

1. In order to evaluate and document the SBGT drains, Operations shall initiate a Mechanical Bypass Request and tag the Tygon tubing configuration as plant equipment.

2. A review will be performed to identify if there are any other instances of Tygon tubing being used for operating purposes. If any other instances are identified, they will be reviewed and documented per the Mechanical Bypass Request Procedure and tagged.

3. Plant personnel will be given specific training on this event as well as the result of item 2 (above).

ADDITIONAL INFORMATION

No similar occurrences have been reported to the Commission in the last five years.

VERMONT YANKEE NUCLEAR POWER CORPORATION

P. O. BOX 157
GOVERNOR HUNT ROAD
VERNON, VERMONT 05354

July 18, 1988
VYV 88-141

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

REFERENCE: Operating License DPR-28
Docket No. 50-271
Reportable Occurrence No. LER 88-05 Rev.1

Dear Sirs:

As defined by 10CFR50.73, we are reporting the attached Reportable Occurrence as LER 88-05 Rev.1 .

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

for James P. Pelletier
Plant Manager

cc: Regional Administrator
USNRC Office of Inspection and Enforcement
Region I
475 Allendale Road
King of Prussia, PA 19406

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