

Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511

914 736.8001



John H. Garrity
Resident Manager

October 30, 1993
IPN-93-132

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop PI-137
Washington, D.C. 20555

SUBJECT: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
Licensee Event Report # 93-039-00
Personnel Error Associated with Gaseous
Radwaste Design Changes Caused a Violation of
Environmental Technical Specifications and
Prevented Control of Gaseous Radwaste Releases

Dear Sir:

The attached Licensee Event Report (LER) 93-039-00 is hereby submitted in accordance with the requirements of 10CFR50.73. This event is of the type defined in the requirements pursuant to 10CFR50.73(a)(2)(i) and 10CFR50.73(a)(2)(v). Also attached are the commitments made by the Authority in this LER.

Very Truly Yours,

A handwritten signature in cursive script that reads 'John H. Garrity'.

John H. Garrity
Resident Manager
Indian Point 3 Nuclear Power Plant

JHG/vjm

cc: See Next Page

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Mr. Thomas T. Martin
Regional Administrator
Region 1
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406

INPO Records Center
700 Galleria Parkway
Atlanta, Georgia 30339-5957

U.S. NRC Resident Inspector's Office
Indian Point 3

Attachment
List of Commitments

Number	Commitment	Due
IPN-93-132-01	The Site Engineering Services department will perform an evaluation of the current CVCS Hold Up Tank liquid processing configuration. This evaluation will specify the administrative controls necessary to control radioactive and hydrogen gas releases consistent with the original design basis of the facility. This evaluation will be performed and the necessary controls instituted prior to exceeding cold shutdown or processing liquid from the CVCS Hold Up tanks which exceed the expected design basis concentration in the monitor tanks.	November 30, 1993
IPN-93-132-02	The Radiological and Environmental Services Department will evaluate the increased radioactive gas releases since 1980 and amend the Semiannual Radiological Effluent Reports, as appropriate, with the next semiannual report.	February 1994

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 (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.

FACILITY NAME (1) Indian Point Unit 3	DOCKET NUMBER (2) 05000286	PAGE (3) 1 OF 5
TITLE (4) Personnel Error Associated with Gaseous Radwaste Design Changes Caused a Violation of Environmental Technical Specifications and Prevented Control of Gaseous Radwaste Releases.		

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	01	93	93	-- 039 --	00	10	30	93	FACILITY NAME	DOCKET NUMBER 05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)									
POWER LEVEL (10) 000	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	OTHER						
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)						
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)							
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)							

LICENSEE CONTACT FOR THIS LER (12)

NAME Matthew Kerns, Senior Chemical Engineer	TELEPHONE NUMBER (Include Area Code) (914) 736-8452
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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)		
YES (If yes, complete EXPECTED SUBMISSION DATE).	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	MONTH	DAY	YEAR

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

On October 1, 1993 at approximately 1757 hours, with the reactor in cold shutdown at atmospheric pressure, the Operations department notified the NRC of a condition that could have allowed the uncontrolled release of radioactive gases to the environment. The condition resulted from the intentional bypass in 1980 and subsequent removal in 1987 of the Chemical and Volume Control System Gas Stripper-Boric Acid Evaporator packages. These actions allowed Chemical and Volume Control System Hold Up tanks to be routed to the vented outside Monitor Tanks without gas stripping. The cause of the condition was personnel error, inattention to detail. Corrective action to isolate the hold up tanks was completed at 2025 hours on October 1, 1993. Corrective action to control potential releases from these vented outdoor tanks will be complete by November 30, 1993. Corrective action to amend past Semiannual Radiological Effluent Reports will be complete in February 1994.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

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

DESCRIPTION OF EVENT

On October 1, 1993 with the reactor in cold shutdown at atmospheric pressure a review by Radiological and Environmental Services (RES) and Technical Services personnel identified a condition that could have allowed the uncontrolled release of radioactive gases to the environment. This condition resulted from the intentional bypass and subsequent removal of the Chemical and Volume Control System (CVCS) (CA) Gas Stripper (DGS) - Boric Acid Evaporator (EVP) packages. Operations notified the NRC on October 1, 1993 at 1757 hours per 10CFR50.72(b)(2)(iii) (c) and documented the condition in a plant Significant Occurrence Report (SOR 93-03-582).

In 1980, the Power Authority installed a demineralizer (FDM) treatment system to process radioactive liquid waste. This method was evaluated per 10 CFR 50.59 in a Nuclear Safety Evaluation (NSE 80-03-023 WDS-L) which limited the use of the system to treatment of the Waste Hold Up Tank (TK). Contrary to this evaluation, during the period between 1980 and 1983, processing of liquid from the CVCS Hold Up Tanks using this alternate method was initiated, bypassing the CVCS gas stripper - boric acid evaporators. Radiological and Environmental Services and Operations attempted to ascertain the group responsible for bypassing the gas stripper as well as whether the bypasses were controlled by procedure and, if so, the quality of the procedure. The type of utility personnel involved (licensed or non-licensed) and the quality of plant procedures could not be ascertained. The CVCS gas stripper - boric acid evaporators were installed as part of the original system design to remove radioactive gas and hydrogen (Final Safety Analysis Report sections 9.2.2 and 11.1.1) from the CVCS liquid prior to transfer to 31 and 32 Monitor Tanks. The Monitor tanks are vented outdoor tanks and were not required to be monitored for gas release.

The bypass of the CVCS gas stripper - boric acid evaporators continued until 1987 when modification 86-03-122 CVCS was issued for their removal. Technical Services personnel in preparation of the nuclear safety evaluation (NSE 86-03-122 CVCS) for this modification failed to identify the need to remove radioactive gases and hydrogen to meet the original design basis when processing radioactive liquid from the CVCS Hold Up Tanks. Subsequent evaluation of the dissolved hydrogen concentration indicates the hydrogen in the CVCS holdup tanks is reduced sufficiently to prevent a hazard in the monitor tanks.

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

Indian Point 3 continued to process CVCS Hold Up tanks using this system until October 1, 1993 when the release path through the Monitor Tank vents was identified. Operations personnel isolated the CVCS Hold Up Tanks from the demineralizer treatment system at 2025 hours on October 1, 1993.

CAUSE OF EVENT

The cause of this event is personnel error, inattention to detail. Operations and Radiological and Environmental Services personnel intentionally bypassed the CVCS gas stripper - boric acid evaporators without adequately reviewing the impact on radioactive gas and hydrogen releases. A contributing cause was the failure of Technical Services personnel to adequately evaluate the design requirements of the CVCS gas stripper - boric acid evaporator prior to removal of the equipment.

CORRECTIVE ACTION

Procedures and documents to provide additional guidance in the design change process have been developed since this event occurred. These administrative changes will prevent recurrence and include:

- A Modification Control Manual requires engineering personnel to perform a more detailed review of the design basis prior to modification of a system.
- Design Basis Documents have been developed for key systems such as the Chemical and Volume Control System and are used in modification evaluation.
- The administrative procedure (AP-3, Procedure Preparation, Review and Approval) governing procedure development and change has been substantially revised. This revision ensures that all alterations to procedures receive a more detailed screening.

The Site Engineering Services department will perform an evaluation of the current CVCS Hold Up Tank liquid processing configuration. This evaluation will specify the administrative controls necessary to control radioactive and hydrogen gas releases consistent with the original design basis of the facility. This evaluation will be performed and the necessary controls instituted prior to exceeding

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cold shutdown or processing liquid from the CVCS Hold Up tanks which exceed the expected design basis concentration in the monitor tanks. The scheduled completion date is November 30, 1993.

The Radiological and Environmental Services Department will evaluate the increased radioactive gas releases since 1980 and amend the Semiannual Radiological Effluent Reports, as appropriate, with the next semiannual report. This is scheduled for submittal in February 1994.

ANALYSIS OF EVENT

This event is reportable under 10CFR50.73(a)(2)(i)(b) which requires reporting any operation or condition prohibited by the Technical Specifications. This event is also reportable under 10CFR50.73(a)(2)(v) which requires that the Licensee report any event or condition that alone could have prevented the fulfillment of the safety function of structure or systems that are needed to control the release of radioactive material.

The CVCS gas stripper - boric acid evaporator removal was performed without evaluating the modification in accordance with Technical Specification Appendix B section 5.7. The bypass and subsequent removal of the CVCS gas stripper - boric acid evaporator increased the transport of radioactive gases to a vented outside tank. This resulted in an unevaluated and uncontrolled release point.

Other conditions have recently been reported where personnel error in design change control resulted in Technical Specification violations. These are LER 93-036, LER 93-028 and LER 93-005.

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SAFETY SIGNIFICANCE

No effect to the public health and safety resulted from this event. This was concluded by the RES department based on the calculation of the dose to the public using actual conditions during the event and with maximum allowed Reactor Coolant radioactivity concentrations (Technical Specifications section 3.1.D). The results were:

- The dose resulting from actual operation during this period did not exceed a small fraction (in all cases less than ten percent) of the dose limits specified in 40 CFR 190, 10 CFR 20, or Technical Specifications Appendix B sections 2.4 and 2.6.
- The potential dose resulting from operation at the maximum allowed Reactor Coolant radioactivity concentration would not have exceeded the limits specified in 10 CFR 20 and 40 CFR 190.

The extent of condition is limited to the bypass and subsequent removal of the CVCS Gas Stripper - Boric Acid Evaporator packages. A review of significant modifications to the radioactive waste systems by the RES department identified no similar conditions. The ongoing design basis documentation program will identify design change issues that may exist outside the RES review.