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L. M. Hill
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April 29 1994
IPN-94-053

U.S. Nuclear Regulatory Commission
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SUBJECT: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
Licensee Event Report # 94-001-01
"Pressurizer Liquid Sampling Line Support Discrepancies Place the Plant Outside its Design Basis Due to Personnel Error"

Dear Sir:

The attached Licensee Event Report (LER) 94-001-01 is hereby submitted in accordance with the requirements of 10CFR50.73. This LER revision is required to provide the results of a subsequent investigation into the event. This event is of the type defined in the requirements pursuant to 10CFR50.73(a)(2)(ii)(B). No new commitments are being made by the Authority in this LER revision.

Very truly yours,

L. M. Hill
Resident Manager
Indian Point 3 Nuclear Power Plant

LMH/vjm

cc: See Next Page

IE22

cc: Mr. Thomas T. Martin
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NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Indian Point Unit 3	05000286	1 OF 7

TITLE (4) Pressurizer Liquid Sampling Line Support Discrepancies Place the Plant Outside its Design Basis Due to Personnel Error

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
01	28	94	94	-- 001 --	01	04	29	94		05000
									FACILITY NAME	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)		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)		

Name	TELEPHONE NUMBER (Include Area Code)
James Gillen, General Chemistry Supervisor	(914) 736-8450

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 January 28, 1994, with the plant in cold shutdown, a Maintenance Engineer identified valve and tubing support discrepancies at the sampling system line for sampling pressurizer liquid space. This event, which occurred prior to November 14, 1992, is a result of poor work practices and attitudes that previously existed. Stress analysis indicates that, in this condition, tubing stresses could have exceeded code requirements but would have maintained operability for the sampling system in a seismic event. Therefore, this event places Indian Point 3 outside its design basis. This event was caused by personnel error (inadequate work practices) during maintenance activities. The Authority used this event to further emphasize to station personnel the expectations regarding supervisory oversight, procedure adherence and proper work practices. Corrective action has been and continues to be taken to address the procedural adherence issue. The support discrepancies will be corrected and a walkdown will be conducted to determine the extent of condition.

DESCRIPTION OF EVENT

On January 28, 1994, at approximately 1100 hours with the plant in a cold shutdown condition (reactor power level at 6 cps, reactor coolant temperature at 108 degrees F, reactor coolant pressure at atmospheric and pressurizer level at 29%), a Maintenance Engineer identified that one of two valve support mounting bolts for Sampling System valve SP-AOV-956C were missing and that a tubing U-bolt restraint downstream of this valve was missing (see Figure 1). This event, which occurred prior to November 14, 1992, is a result of poor work practices and attitudes that previously existed. Investigation into the event revealed further discrepancies as described below. Stress analysis of the as found condition indicates that the tubing does not meet USAS B31.1 design basis stress limits indicated in the Final Safety Analysis Report for sampling system piping.

The Maintenance Department investigated the work history on the sampling line and related Problem Identifications (PIDs) and concluded, as reported in LER 94-001-00, that this event probably occurred on November 13, 1992. On November 13, 1992 maintenance personnel replaced a leaking Swagelok compression fitting used as the tee connection between the Isolation Valve Seal Water System (IVSWS)(BD) and the sampling system line for pressurizer liquid space sampling. The IVSWS line is connected to the pressurizer liquid space sampling line between containment isolation valves SP-AOV-956C and SP-AOV-956D. Maintenance concluded that when the tubing was cut to remove the fitting, the resulting gap between tubing ends was too wide for the new Swagelok to be installed. The maintenance crew attempted to make up this gap in the tubing by pulling together the tubing which was held fast by various restraints. To accomplish this, the maintenance investigation concluded that the following actions were taken outside of the scope of the work request: (1) one of two SP-AOV-956C actuator mounting bolts was removed; (2) the U-bolt tubing restraint on the downstream side of valve SP-AOV-956C was removed; (3) the U-bolt tubing restraint on the upstream side of valve SP-AOV-956C was cut in half (this also resulted in the marring of the primary sample tubing); and (4) the two bolts which mounted the SP-AOV-956C air operator solenoid valve were removed. A PID was written on November 14, 1992 reporting the cut U-bolt. However, this condition was not identified as potentially reportable until January 28, 1994 when additional support discrepancies were identified.

During the interviews conducted as part of the investigation for this incident, workers and supervisors associated with this job activity disavowed any knowledge of cut or missing U-bolts or component supports.

A second investigation reached a different conclusion than the investigation reported in LER 94-001-00. The second investigation concluded that the damage discussed earlier most probably occurred on May 6, 1992 when contractor personnel replaced a body to bonnet gasket on valve SP-AOV-956C. This conclusion was reached considering the following:

1. The second investigation determined that SP-AOV-956C was physically removed from its normal location (i.e., 54' Pipe Penetration area) to an established decontamination area on the 73' elevation of the Radioactive Machine Shop (RAMS) building on May 6, 1992. The valve was removed by a contractor during the performance of a work request for replacement of a body to bonnet gasket. To remove the valve, the U-bolt restraints on either side of SP-AOV-956C, the actuator mounting bolts and the air supply tubing would have had to be cut or removed.

2. The investigation reported in LER 94-001-00 did not identify the above work package as a potential source of the valve and tubing support discrepancies because there were no step instructions that would call for removal of the valve and no indication in the work package that this had been done. The removal of the valve was not authorized by the work package text or noted in the package. Removal of the valve was confirmed in a radiological survey log sheet.

3. The tubing to the Swagelok fitting would be tight with mounting bolts and U-bolts installed. With mounting bolts removed and the U-bolts either cut or missing, the tubing to the Swagelok fitting would have been loose and easily moved. The maintenance crew that replaced the Swagelok fitting on November 13, 1992, confirmed that there was enough tubing movement to replace the Swagelok fitting. The maintenance crew who replaced the same Swagelok fitting on July 31, 1992 also confirmed that there was tubing movement.

4. Work associated with valve SP-AOV-956C was reviewed back to 1976. No other work packages were identified where work was performed that could reasonably have resulted in the identified damage.

5. The second investigation concluded that it would have been much more difficult for the mechanics to attempt to cut and remove the U-bolts and valve mounting bolts rather than to install a union and new tubing. There were high temperatures in the work area during the July and November jobs and the work packages for both jobs contained provisions within their step lists which allowed tubing gaps to be made up with a union and new tubing.

6. Lighting was poor and access was restricted in the area where valve SP-AOV-956C is located. The investigation team confirmed that a walkdown of the system would have been unlikely to readily identify the missing mounting bolts, the cut U-bolt and the missing U-bolt.

The "work performed" section of the work request to replace the body to bonnet gasket did not identify removal of the U-bolts and mounting bolts or removal of the valve. The work was not authorized by the work request. The unauthorized work practices were in violation of Revision 17 to Administrative Procedure AP-9, "Work Control" and Revision 3 of Maintenance Directive 3-MD-23, "Use of Documented Instructions". Revisions 17 through the current Revision 23 of AP-9 require that tasks be performed as directed by a step text list which is part of the work request. If work cannot be performed to completion by the step text and the changes required constitute a change of scope and additional work is required, the AP requires changes to the step text to be made with the concurrence of Quality Assurance and the Performance Group. Revision 3 through the current Revision 5 of MD-23 require the user to stop an evolution and notify his supervisor if the work instruction is such that verbatim compliance cannot be met.

CAUSE OF EVENT

The error on the part of the contractor personnel is that they applied poor work practices and worked outside of established work control practices (procedures) during the performance of a work request.

A contributing cause was lack of supervisory oversight on the part of the job supervisors responsible for the maintenance activity. The job supervisors did not inspect the work performed by their respective crews.

CORRECTIVE ACTIONS

The following corrective actions have been or will be taken to prevent the recurrence of this event:

1. The Authority has evidence that current work control practices have improved and that there is heightened awareness among plant personnel about acceptable work practices. The Maintenance Manager or designee used this event to further emphasize to maintenance personnel the expectations regarding supervisory oversight, procedure adherence and proper work practices. This closes commitment IPN-94-021-01.

2. The Authority has completed the investigation of the event and reported the results in LER 94-001-01. This closes commitment IPN-94-021-02.

3. Corrective action identified in LER 93-053-00 will also prevent recurrence of this event. Corrective action entailed an "all hands" meeting which took place on December 6, 1993 to discuss management expectations for procedure compliance and to identify clear discipline policies for failure to follow procedure. The discipline policies instituted since December 1993 have not precluded procedure adherence problems. As a result these policies are under reevaluation. Also, increased management monitoring of procedural adherence in the field has continued in order to help assure procedure compliance.

4. To correct the discrepancies, the supports to SP-AOV-956C and its accompanying solenoid valve will be reworked/reinstalled. The marred section of primary sample tubing upstream of SP-AOV-956C will be replaced via work request WR 94-00364. These actions will be completed prior to startup from the current outage.

5. To determine extent of condition, the remainder of the primary sample system air operated valves and associated lines will be examined by the Nuclear Engineering and Design Department through field walkdown to verify that supports are installed in accordance design specifications. The walkdown will also examine other locations where tubing penetrates containment and Swagelok fittings are likely to be in use. These actions are scheduled for completion prior to startup from the current outage.

6. The NRC identified resolution of vendor/contractor oversight and control deficiencies as a restart issue in a letter to the Authority on August 11, 1993. As part of the effort to address this issue, an IP3 working group assessed the process for control of vendor activities and identified three predominant problems. The root causes of these problems were identified and solutions were implemented. These solutions revise the vendor control process to prevent recurrence of the vendor control problem reported in LER 94-001-01. These solutions will be reviewed by the NRC Staff as part of the restart evaluation so they are not being added as a commitment in LER 94-001-01.

ANALYSIS OF THE EVENT

This event is reportable pursuant to 10 CFR 50.73(a)(2)(ii)(B) because the support discrepancies identified placed the sampling system pressurizer liquid space sampling line outside design basis requirements.

Similar events involving inadequate work practices were reported in Licensee Event Reports (LER) 92-017-01, 93-012-00, 93-027-00 and 93-018-00. LER 92-017-01 reported an unauthorized material substitution which rendered the CO_2 Fire Protection system inoperable. LER 93-012-00 reported a Weld Channel and Containment Penetration Pressurization (WCCPP)(BD) supply line disconnect caused by work outside of work control process. LER 93-027-00 reported that the Emergency Diesel Generator (EK)(DG) control cabinets (CAB) were missing bolts. This condition was caused by personnel error in that personnel did not replace the bolts when work was complete. LER 93-018-00 reported that a hemyc blanket (Appendix R radiant energy shield) was removed outside the scope of work control procedures.

SAFETY SIGNIFICANCE

This event did not affect the health and safety of the public. Stress analysis performed on the pressurizer liquid sampling line concluded that the line would remain operable following a seismic event so that all safety functions would have been performed.

To evaluate the extent of condition, a corrective action is in place to conduct a walkdown of the remaining sampling system air operated valves to verify the acceptability of supports. The walkdown will also examine other penetration locations where tubing penetrates containment and Swagelok fittings are likely to be in use.

Figure 1

As Found Condition of
Pressurizer Liquid Space Sample Line