NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Indian Point Unit 3	0 5 0 0 0 2 8 6	1 OF 0 4

TITLE (4)
CO_2 Fire Protection System Inoperable Due to Unauthorized Material Substitution

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 NAMES	DOCKET NUMBER(S)
0 6	2 5	9 2	9 2	— 0 1 7	— 0 1	0 3	1 7	9 3		0 5 0 0 0
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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)	0 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)	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)	X 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
Doug Ames, Licensing Coordinator	AREA CODE 9 1 4 7 3 6 - 8 0 0 4

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
A	K Q	D M P	P 0 1 4	N					

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)

On June 25, 1992 Indian Point 3 was in a cold shutdown condition for the cycle 8/9 refueling outage. While conducting a functional test of the CO2 Fire Protection System, two of ten fire dampers that collectively make up number 9 damper failed to completely shut when their fusible links were actuated. The cause was an inadequate work practice. An unauthorized material was applied in place of "J-hooks". The "J-hooks" are used to connect the fusible links to the shutter mounting brackets. The unauthorized material was apparently installed between August 16, 1991 and June 25, 1992. Engineering calculations showed that the CO2 system was still capable of extinguishing a fire as designed. Corrective actions to prevent recurrence included updating the fusible link installation procedure to specify the correct installation of "J-hooks" and a walkdown of the CO2 Fire Protection System to insure proper "J-hook" installation.

DESCRIPTION OF THE EVENT

On June 25, 1992 Indian Point 3 was in a cold shutdown condition for the cycle 8/9 refueling outage. During regularly scheduled performance of the CO2 system functional surveillance test (3PT-R82), two of ten individual fire dampers (DMP) did not fully close when the fusible links actuated. The ten individual dampers make up damper 9, which is part of the CO2 Fire Protection System (KQ).

Damper 9 closes upon a CO2 activation to contain the fire suppressant. The damper is contained in the wall that separates the control building from the turbine hall at the 15 foot elevation (EL-15). The damper was manufactured by Pacific Air Products (PO14). The damper is located approximately ten feet above the floor.

On June 25, 1992 the cause of the two individual dampers not fully shutting was determined to be paper clips installed in place of "J-hooks" on the shutter fusible links. The "J-hooks are used to connect the fusible links to the damper mounting brackets. The paper clips became entangled in the dampers causing two individual dampers to remain partially open.

On June 29, 1992 the CO2 functional test (3PT-R82) was signed as having met acceptance criteria. The decision was based upon an engineering review that determined the failure of damper 9 did not affect the overall operability and functionality of the CO2 system.

On October 22, 1992 the performance test with damper 9 was again reviewed based upon a concern for an emergency diesel generator damper described in LER 92-016. An additional evaluation to determine the impact of the two of ten fire dampers failures affect on operability of the CO2 system was conducted. The calculation concluded that the system was still able to perform its intended function.

On October 27, 1992 this event was determined to be reportable. A Significant Occurrence Report was then written on November 2, 1992 to formally identify the event reportability. Reportability is based upon the paper clips being installed between August 16, 1991 and June 25, 1992.

The investigation was unable to determine when the paper clips were installed. A review of the work history on the dampers identified that the dampers were restored after maintenance activities on August 16, 1991. The maintenance crew that

restored the dampers stated that there were no paper clips at that time. There is no record of maintenance being performed between August 16, 1991 and June 25, 1992.

A system walkdown has determined that all dampers are now properly configured.

CAUSE OF THE EVENT

The cause of the event was personnel error. The personnel error occurred due to inadequate work practices. The inadequate work practice was paper clips installed in place of "J-hooks". An investigation did not determine the reason for the installation of the paper clips.

The cause for delay in reportability was the lack of clarity in technical specification 3.14.G.1. This section does not clearly state what equipment is needed in order to consider the CO2 Fire Protection System operable. This caused confusion among the staff as to whether all sections of this damper were needed in order to consider the system operable.

CORRECTIVE ACTIONS

The following corrective actions are planned or are completed to prevent recurrence of the event:

1. The "J-hook" installation was incorporated into the step list developed by the Instrument and Control (I&C) Department. This step list was utilized to restore the fusible links from 3PT-R82 conducted during 1992.

2. All fusible links in the CO2 Fire Protection System have been inspected for proper "J-hook" installation.

3. A formalized review of whether the failure of damper 9 to fully actuate affected overall system operability has been conducted.

4. Corrective action No. 4 of the original LER stated that an operator aid would be developed to assist Operations Department personnel in CO2 Fire Protection System operability determinations. The corrective action was based upon the IP3 Technical Specification specifying the damper in the surveillance section but not in the limiting condition section. Upon further review of technical specifications, it has been determined that, with exception of this case, the equipment identified in the surveillance

sections are also identified in their respective Limiting Conditions for Operations sections. The operator training noted below addresses this case and an operator aid is no longer necessary.

5. The Operations Department staff has been trained on the unauthorized material substitution and the operability concerns of the CO2 system. Additional indepth training on CO2 Fire Protection System operations with emphasis on integrated systems operations and on operability requirements for related support systems will be completed by April 30, 1993.

6. The investigation was unable to determine when and for what reason paper clips were installed.

7. Damper 9 was successfully tested on January 6, 1993 using the CO2 system functional surveillance test (3PT-R82).

ANALYSIS OF THE EVENT

This event is reportable under 10CFR50.73(a)(2)(i)(B). In accordance with plant Technical Specification 3.14.G.2, the CO2 Fire Protection System shall be available to the Control Building (EL-15) whenever equipment in those areas is required to be operable. Also, in accordance with plant Technical Specification 4.12.G.1.c this damper is required to actuate (in the shut direction) upon the receipt of a CO2 system actuation signal.

During performance of System Functional Test of CO2 System, 3PT-R82, Rev. 4, two of the ten dampers that make up damper 9 failed to fully close. The failure of these dampers to fully close during the functional test conducted on June 25, 1992 combined with the probability the paper clips were installed after August 16, 1991 means that the CO2 Fire Protection System could have been inoperable from August 16, 1991 until the system was fully restored from testing on July 9, 1992.

SAFETY SIGNIFICANCE OF THE EVENT

This event had no impact on the health and safety of the public. Preliminary engineering calculations show that even with two dampers failing to fully close the CO2 Fire Protection System is able to maintain a 50 percent concentration for 20 minutes and extinguish a fire. This is in accordance with initial design standards and applicable National Fire Protection Association (NFPA) codes.

SECURING FROM THE EVENT

The CO2 Fire Protection System was fully restored to operable status on July 9, 1992.