

Indian Point 3
Nuclear Power Plant
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Robert J. Barrett
Site Executive Officer

November 13 2000
IPN-00-078

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

SUBJECT: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
License No. DPR-64
Licensee Event Report # 2000-010-00
Isolation of the Containment Spray System Spray Additive Tank During Preventative Maintenance is a Condition Prohibited by Technical Specifications and Outside Design Basis Caused by Personnel Error.

Dear Sir:

The attached Licensee Event Report (LER) 2000-010-00 is hereby submitted as required by 10 CFR 50.73. This event is of the type defined in 10 CFR 50.73 (a)(2)(i)(B), 10 CFR 50.73(a)(2)(ii)(B) and 50.73(a)(2)(v) for a condition recorded in the New York Power Authority's (NYPA) corrective action process as Deviation Event Report DER 00-02603.

NYPA is making no new commitments in this LER.

Very truly yours,



Robert J. Barrett
Site Executive Officer
Indian Point 3 Nuclear Power Plant

cc: See next page

IE22

cc: Mr. Hubert J. Miller
Regional Administrator
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U. S. Nuclear Regulatory Commission
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U.S. Nuclear Regulatory Commission
Resident Inspectors' Office
Indian Point 3 Nuclear Power Plant

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)

Indian Point 3

DOCKET NUMBER (2)

05000286

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TITLE (4)

Isolation of the Containment Spray System Spray Additive Tank During Preventative Maintenance is a Condition Prohibited by Technical Specifications and Outside Design Basis Caused by 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
07	21	2000	2000	-- 010	-- 00	11	13	2000	N/A	05000
									N/A	05000

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)				
POWER LEVEL (10)	100	20.2201(b)	20.2203(a)(2)(v)	<input checked="" type="checkbox"/>	50.73(a)(2)(i)	50.73(a)(2)(viii)
		20.2203(a)(1)	20.2203(a)(3)(i)	<input checked="" type="checkbox"/>	50.73(a)(2)(ii)	50.73(a)(2)(x)
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)		50.73(a)(2)(iii)	73.71
		20.2203(a)(2)(ii)	20.2203(a)(4)		50.73(a)(2)(iv)	OTHER
		20.2203(a)(2)(iii)	50.36(c)(1)	<input checked="" type="checkbox"/>	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
		20.2203(a)(2)(iv)	50.36(c)(2)		50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Frank Conte, System Engineer	914-736-8316

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input checked="" type="checkbox"/>	<input type="checkbox"/>				

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

On October 12, 2000 Engineering and Operations personnel determined that the Containment Spray (CS) system Sodium Hydroxide (NaOH) Spray Additive Tank (SAT) had been isolated on July 21, 2000 for approximately eight hours and forty minutes to perform preventative maintenance. The CS SAT was isolated, preventing automatic addition of NaOH to the CS system, by shutting SAT isolation valve, SI-1841, as part of the protective tagout for replacing the pilot solenoid on CS SAT discharge isolation valve, SI-AOV-876B. No allowed outage time is provided for this condition in Technical Specification section 3.3.B, so this is a condition prohibited by Technical Specifications. This event also resulted in the CS system being outside of its design basis. The cause of this event was human error. Operators mis-interpreted the Technical Specifications when applying the system protective tagout. Corrective actions taken include an Operations Shift Order communication about this event to the operating crews. This event had no significant impact on public health and safety due to the short time period in which the SAT was isolated and because all three Emergency Diesel Generators (EDGs), both CS pumps and all five Containment Fan Cooler Units (FCUs) remained operable.

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

Note: The Energy Industry identification system Codes are identified within the brackets {}

DESCRIPTION OF EVENT

On October 12, 2000, at approximately 1900 hours, with the reactor at approximately 100 percent steady state power, a system engineer (SE) completed a review of plant operating logs to determine unavailability of the Containment Spray (CS) system {BE}, as part of 10 CFR 50.65 Maintenance Rule implementation. The SE determined that the CS Spray Additive Tank (SAT) {TK} was isolated on July 21, 2000 for about eight hours and forty minutes. The SE review determined that Operations had closed a normally locked open CS system valve, SAT isolation valve {ISV} SI-1841. SI-1841 was closed as part of the protective tagout isolation boundary for preventative maintenance to replace the pilot solenoid for SI-AOV-876B, CS SAT discharge isolation valve. The work control operator assigned to create the package for this job prepared a plant tagout that isolated the upstream and downstream valves necessary to provide isolation of SI-AOV-876B. During the period of SAT isolation on July 21, 2000, the reactor was at approximately 100 percent steady state power. Technical Specification (TS) 3.3.B.1.a. requires that the reactor shall not be brought above the cold shutdown condition unless the CS SAT is within volume and chemistry limits. However, TS 3.3.B does not provide any allowed outage time for the SAT. TS 3.3.B.2.c. allows that "any valve required for the functioning of the system during and following accident conditions may be inoperable provided it is restored to an operable status within 24 hours and all valves in the system that provide duplicate function are operable." Although closing a valve does not necessarily make it physically inoperable, no outage time is allowed in this case because there is no duplicate valve for SI-1841 within the CS system, and isolating the SAT disables all NaOH injection capability. Operators performed the system alignment because they believed that closing this valve was justified by TS 3.3.B.2.c. and the 24-hour allowed outage time applied. Closing this valve was not recognized by the licensed staff as placing the plant in a condition with no outage time allowed. During the entire time that SI-1841 was shut, and the CS SAT was isolated, all five Containment Fan Cooler Units (FCUs) {BK}, both CS pumps {P}, and the three Emergency Diesel Generators (EDGs) {EK} remained operable.

A root cause assessment (RCA) was initiated to investigate this event and to determine the extent of condition. The extent of condition review included a check of Limiting Conditions for Operation (LCO) processed by Operations since July 1999, when a second licensed operator check was added to the checklist for LCOs. This review indicated that approximately 1400 LCOs had been processed over this approximate 14-month period. No cases of exceeding a required LCO allowed outage time were identified.

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CAUSE OF EVENT

The event was caused by cognitive personnel error as a result of licensed operators mis-interpreting TS 3.3.B.2.c when aligning a part of the CS system for a preventative maintenance activity. A contributing cause of the operator error was "tunnel vision" in focusing on the specific work activity while not using an appropriate level of attention to detail and self-checking to make a proper TS interpretation. A lack of licensed operator familiarity with this infrequently applied CS system TS was also a contributor.

CORRECTIVE ACTIONS

The following are actions that have been or will be performed under the Indian Point 3 (IP3) corrective action program to address this event:

- * An operations shift order was written and communicated to operations personnel directing that the CS SAT should not be isolated above cold shutdown and, since similar wording regarding allowed times with duplicate functions exists in other locations within the TS, appropriate use of self-checking techniques are expected when reviewing this and similarly worded TS.
- * Appropriate coaching and counseling will be conducted for those operators involved with this event.
- * Licensed operators will receive training on identified infrequently applied TS.
- * Operations Management will communicate to operations personnel concerning the need for performing a thorough review of work having TS requirements.
- * An assessment will be conducted as to necessary enhancements required in the work control process to better support work packages with TS implications.

ANALYSIS OF EVENT

This event is reportable under 10 CFR 50.73(a)(2)(i)(B). The Licensee shall report any operation or condition prohibited by the plant's Technical Specifications. For TS LCOs where no exception time is specified for inoperable components, TS 3. states that this time is assumed to be zero. The event meets the reporting criteria for a condition prohibited by TS because TS 3.3.B.2 does not specify an allowed outage time for the SAT or valve SI-1841. The condition prohibited by TS existed for approximately 8 hours and 40 minutes on July 21, 2000.

This event is also reportable under 10 CFR 50.73(a)(2)(ii)(B); the CS system was placed in a condition outside of its design basis in that the CS SAT would not be capable of NaOH addition. The IP3 safety analysis assumes the addition of NaOH from the CS SAT for mitigation of analyzed DBAs for purposes of supporting Containment {NH} iodine removal and pH control in the Containment and Recirculation Sumps.

This event is further reportable as a safety system functional failure (SSFF) under 10CFR 50.73(a)(2)(v).

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In response to this event, the operating shift notified the NRC of a condition outside design basis of the plant in accordance with 10 CFR 50.72(b)(1)(ii)(B). This was documented in a 1-hour ENS report, log number 37425.

A review of the past two years of Licensee Event Reports (LER) for events involving mis-interpreting TS and placing the plant in a condition prohibited by TS or outside of plant design basis, as a result of personnel error, determined there was one similar event report. This was LER 99-009 which involved an Isolation Valve Seal Water System (IVSWS) valve and modification to the IVSWS system which led to a configuration outside TS because a potential LCO condition was not identified. That event failed to identify a relevant section of TS, whereas the present event involved misinterpretation of an identified TS section.

SAFETY SIGNIFICANCE

This event had no significant effect on the health and safety of the public for several reasons.

There were no actual safety consequences for the event because there were no events or conditions that required mitigation by or use of the CS NaOH SAT function during the time valve SI-1841 was shut. All three EDGs, both CS pumps and all five Containment FCUs remained operable during this event.

There were no potential safety consequences of the event under reasonable and credible alternative conditions. An isolated CS SAT was determined to result in low safety significance based upon the following:

First, assuming the CS Spray Additive System is unavailable and the pH adjustment of the CS system flow for corrosion protection and iodine removal enhancement is reduced, the CS system still provides adequate capability to remove iodine from the containment atmosphere in the event of a design basis accident (DBA), assuming a single active failure (i.e., loss of a single EDG). Together, the CS system pumps, without NaOH addition, and the Containment FCUs provide acceptable iodine removal capability. The low population zone (LPZ), site boundary (SB) and control room (CR) dose projections are within acceptable limits based upon preliminary Westinghouse calculations.

Second, the CS SAT was isolated for a short time in comparison to the allowed outage time designated in the Westinghouse Standard Technical Specifications (STS), NUREG-1431 and in the IP3 current submittal of Improved Technical Specifications (ITS) for the Spray Additive System. Both of these documents allow a 72-hour completion time for a loss of spray additive system function, which takes into account the low probability of the worst case design basis accident during that period. In the July 21, 2000 CS SAT isolation event, a total of approximately eight hours and forty minutes of isolation time occurred. This short time of SAT isolation is considered non-risk significant from a radiological release standpoint.

Third, since the addition of NaOH does not impact either the frequency of core damage or containment failure, the SAT and associated piping is not modeled in the IP3 Individual Plant Examination (IPE).

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Review of this event against the guidelines of NEI 99-02 Rev. 0, "Regulatory Assessment Performance Indicator Guideline," concluded it was a safety system function failure (SSFF). The design safety functions of the CS system include: a) containment depressurization for heat removal, b) NaOH addition for iodine scrubbing for dose reduction and c) long term Recirculation and Containment Sump pH control. Because valve SI-1841 was isolated, the CS system would not have provided its design function of NaOH addition for iodine scrubbing or long term sump pH control in support of controlling the release of radioactive material. In accordance with NUREG-1022, Rev.1, Section 3.3.3, 10 CFR 50.73 (a)(2)(v), the event is reportable as an SSFF considering the criteria that an "event must be reported regardless of whether or not an alternate safety system could have been used to perform the safety function." This safety function of acceptable iodine scrubbing for dose reduction can be performed by combined operation of the Containment FCUs and the CS system itself without the SAT available. Sump pH control for corrosion concerns is a long term issue that would have been achieved by other means.