

Indian Point 3
Nuclear Power Plant
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**New York Power
Authority**

William A. Josiger
Resident Manager

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IP3-89-050

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U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, D.C. 20555

Dear Sir:

The following is a special report of a Pressurizer Power Operated Relief Valve (PORV) actuation at Indian Point 3, prepared in accordance with Technical Specification 6.9.2.j. The event described is covered by Technical Specification 3.1.A.8.c.

At 2336 hours on June 10, 1989, during a plant heatup after a refueling outage, the low temperature overpressure protection system (OPS) actuated, functioned as designed and protected the Reactor Coolant System from exceeding pressures in excess of the Appendix G limits.

At the time of the event, the Control Room Operators were performing the following evolutions:

- 1) RCS temperature was being maintained at 180°F
- 2) Reducing pressurizer level to form a bubble in the pressurizer

As per plant operating procedure POP-1.1, "Plant Heatup From Cold Shutdown", and SOP-CVCS-5, "Forming a Steam Bubble in the Pressurizer", several pertinent operations were being performed.

- 1) RCS letdown was via HCV-133 (RHR to CVCS letdown) and PCV-135 (letdown backpressure controller)

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- 2) All three letdown orifices (200A, B and C) were open
- 3) Pressurizer level was being gradually decreased
- 4) Charging pump speed was in manual control

The operator was maintaining RCS pressure by controlling letdown flow to compensate for thermal expansion in the pressurizer due to the heatup to draw a bubble. He was controlling pressure within a 30 psig band using PR-402 as primary indication of pressure and trend. PR-402 failed at this point and started drifting downscale. The operator responded to this by reducing CVCS letdown, which is the required action to decreasing RCS pressure. He next confirmed RCS pressure utilizing other indication. That indication showed that pressure was not decreasing but was increasing in response to his action. He then took the appropriate action of increasing letdown flow, but due to the very tight operating band, he was unable to preclude PORV actuation. He was able to limit the opening of the PORVs to two seconds and subsequently maintained RCS pressure at 400 psig.

The root cause of this transient is as follows:

1. The OPS recorder PR-402 had failed and was drifting downward just at the time that the operator was adjusting pressures. Responding to this malfunctioning indication, he increased pressure. Since the plant was essentially solid at this time, the operator was not able to correct the problem prior to actuation.
2. During low pressure and temperature operations with reactor coolant pumps running, the operators are required to maintain pressure within a very narrow band (as low as 30 psi using PR-402) to prevent OPS actuation.

The following corrective actions are being implemented to prevent recurrence:

1. An evaluation is to be performed to determine the feasibility of adjusting the setpoint of an existing alarm to provide the operators warning of impending OPS actuation.

2. Procedures POP-1.1, POP-3-3, SOP-CVCS-5 and SOP-CVCS-6 will be revised to provide more detailed guidance regarding which RCS pressure instruments are to be used when the OPS system is armed.
3. An evaluation is to be performed to determine the feasibility of changing the OPS curve and the minimum pressure requirements for RCP operation in order to widen the RCS pressure operating band at low RCS temperatures.

Very truly yours,



William A. Josiger
Resident Manager
Indian Point Nuclear Power Plant

WAJ:JC:rj

cc: Mr. William Russell
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Indian Point 3 Resident Inspector's Office