

POWER AUTHORITY OF THE STATE OF NEW YORK

10 COLUMBUS CIRCLE NEW YORK, N. Y. 10019

(212) 397-6200

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December 28, 1979

IPN-79-102

Director, Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Attention: Mr. Albert Schwencer, Chief  
Operating Reactors Branch No. 1  
Division of Operating Reactors

Subject: Indian Point 3 Nuclear Power Plant  
Docket No. 50-286  
Containment Purging and Venting During Normal Operation

Dear Sir:

In response to your letter dated October 23, 1979 regarding  
containment purging and venting during normal operation, and  
reiterating our previous response to a letter from Darrell G.  
Eisenhut (NRC), dated September 27, 1979, to All Light Water  
Reactors regarding containment purging and venting during normal  
operation - guidelines for valve operability, we have begun a  
Valve Qualification Program through Westinghouse on an expedited  
basis. The intent of the program is to demonstrate, through  
analysis, that the existing containment purge and exhaust valves'  
actuators will perform adequately during a design basis accident -  
loss of coolant accident (DBA-LOCA). The analysis will address  
all considerations outlined in the above letter.

The response to each of the NRC Regulatory Staffs' interim  
positions outlined in the October 23, 1979 letter are provided in  
attachment (1) to this letter.

Very truly yours,

*Paul J. Early*  
Paul J. Early  
Assistant Chief Engineer -  
Projects

Subscribed and Sworn to before,  
me this *28* day of *December*,  
1979

*Ruth G. Zapp*  
Notary Public  
RUTH G. ZAPP  
Notary Public, State of New York  
No. 30-4883428  
Qualified in Nassau County  
Commission Expires March 30, 1980

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ATTACHMENT 1  
Containment Purging and Venting During Normal Operation  
Response to Interim Positions

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NRC POSITION 1:

Whenever the containment integrity is required, emphasis should be placed on operating the containment in a passive mode as much as possible and on limiting all purging and venting times to as low as achievable. To justify venting or purging, there must be an established need to improve working conditions to perform a safety related surveillance or safety related maintenance procedure. (Examples of improved working conditions would include de-inerting, reducing, temperature, humidity and airborne activity sufficiently to permit efficient performance or to significantly reduce occupational radiation exposures.)

RESPONSE

Administrative procedures are being revised to specify that whenever the reactor is above cold shutdown, emphasis will be placed on operating the containment in a passive mode as much as possible and on limiting all purging and venting times to as low as achievable. To justify venting, purging or pressure relief, there must be an established need to improve working conditions to perform a safety related surveillance or safety related maintenance procedure or to maintain containment pressure below the safety injection system setpoint.

As also discussed in our previous submittals, the independent 10-inch Containment Pressure Relief Line, not the Containment Purge System, is utilized to relieve normal containment atmosphere pressure buildup. The Containment Pressure Relief System, satisfies the need to periodically relieve containment atmosphere pressure to compensate for air in-leakage to containment from various instrument air system and weld channel and containment penetration pressurization system sources. This pressure relief is necessary to preclude eventual actuation of the high containment pressure safety injection signal thus, avoiding unnecessary and unwarranted tripping and cycling of the unit and actuation of safety injection safeguards systems. Past operating experience has shown that essentially all of pressure relief line use occurs during power operation to maintain containment atmosphere pressure. As stated in our earlier March 2, 1979 submittal, we have committed to limit containment pressure relieving to the minimum time necessary to maintain containment atmospheric pressure.

NRC INTERIM POSITION 2:

Maintain the containment purge and vent isolation valves closed whenever the reactor is not in cold shutdown or refueling mode until such time as you can show that:

- a. All isolation valves greater than 3" nominal diameter used for containment purge and venting operations are operable under the most severe design basis accident flow condition loading and can close within the time limit stated in your Technical Specifications, design criteria or operational procedures. The operability of butterfly valves may, on an interim basis, be demonstrated by limiting the valve to be no more than 30° to 50° open (90° being full open). The maximum opening shall be determined in consultation with the valve supplier. The valve opening must be such that the critical valve parts will not be damaged by DBA-LOCA and that the valve will close under a loss of coolant accident.
- b. Modifications, as necessary, have been made to segregate the containment ventilation isolation signals to ensure that, as a minimum, at least one of the automatic safety injection actuation signals is uninhibited and operable to initiate valve closure when any other isolation signal may be blocked, reset, or overridden.

RESPONSE TO 2.a:

As previously stated in our response dated November 21, 1979, to a letter from Mr. Eisenhut (NRC), a preliminary study based on information supplied by the valve manufacturer (closure rate and maximum  $\Delta P$  related to angle of opening valve), response time of containment pressure instrumentation (based on high containment pressure actual test data) and rate of containment pressure increase from a double ended rupture of a reactor coolant pipe (IP3, FSAR, Fig. 14. 3. 4-2) has indicated that the containment pressure does not exceed the maximum valve closure  $\Delta P$  at any point in time from fully open to fully closed position thus demonstrating operability of the valves. This is the case for the purge and pressure relief valves. However, the purge valves will be administratively maintained closed when above cold shutdown until the complete analysis is performed or valve angular opening restricted between 30° and 50° in accordance with interim position 2. The pressure relief valves will be operated as specified in the response to interim position 1.

RESPONSE TO 2.b:

As stated in our response dated March 2, 1979 to a letter from your office dated November 28, 1978, the isolation signals which are required to automatically close redundant containment purge and pressure relief valves could be over-ridden if purging or pressure relieving was conducted with a high radiation signal continuously present. This could occur if containment ventilation isolation reset buttons are depressed. This practice, however, is not utilized at Indian Point. Instead, administrative controls require that the alarm setpoint be raised or if indication was offscale, the actuation relay from the radiation monitor would be blocked in accordance with the Station Administrative Procedures.

These actions would not prevent an Engineered Safety Systems Actuation Signal from closing these valves, if required. However, we will modify the engineering safeguard circuitry prior to return to service to preclude the blocking of a high radiation isolation signal from overriding the containment isolation signal.