



VERMONT YANKEE NUCLEAR POWER CORPORATION

SEVENTY SEVEN GROVE STREET
RUTLAND, VERMONT 05701

January 9, 1979

B.3.2.1
PC 76-2

REPLY TO:

ENGINEERING OFFICE
TURNPIKE ROAD
WESTBORO, MASSACHUSETTS 01581
TELEPHONE 617-366-9011

United States Nuclear Regulatory Commission
Washington, D. C. 20555

WVY 79-6

Attention: Office of Nuclear Reactor Regulation
Thomas Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

References: (a) License No. DPR-28 (Docket No. 50-271)
(b) USNRC Letter to YAEC dated November 29, 1978
(c) VYNPC Letter to USNRC dated May 16, 1978 (WVY 78-46)
(d) VYNPC Letter to USNRC dated January 9, 1979 (WVY 79-5),
Proposed Change No. 76

Dear Sir:

Subject: Containment Purging During Normal Plant Operations

Reference (b) requested that Vermont Yankee provide either a proposed Technical Specification amendment which would preclude or limit purging during power operation, or a schedule for completion of an evaluation justifying continuation of unlimited purging during power operation. Reference (b) also requested that a review be performed on all safety actuation signal circuits which incorporate manual override features. For ease of presentation, these two issues are separately addressed in the attached pages.

If you have any further questions, please feel free to contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

D. E. Vandenburg
Vice President

COMMONWEALTH OF MASSACHUSETTS)

January 9, 1979

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COUNTY OF WORCESTER

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Then personally appeared before me, D. E. Vandenburg, who, being duly sworn did state that he is Vice President of Vermont Yankee Nuclear Power Corporation, that he is duly authorized to execute and file the foregoing request in the name and on the behalf of Vermont Yankee Nuclear Power Corporation and that the statements therein are true to the best of his knowledge and belief.

Armand R. Soucy
My Commission Expires September 7, 1984

Notary Public

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ATTACHMENT

I. Containment Purging

A. Background

The necessity for Vermont Yankee to justify unlimited purging relates to the requirement to maintain a differential pressure between the drywell and suppression chamber. In order to satisfy this requirement with a minimum of operator manipulation, a continuous vent through selected containment vent and purge valves is necessary to compensate for system characteristics. Rather than justify unlimited purging for all purge and vent valves, Vermont Yankee plans to justify unlimited use only for those valves/systems involved in the containment differential pressure operation. All other purge and vent valves will be limited in their use to 90 hours per year during power operation. This approach has been discussed with your staff and found reasonable. Our proposed change, Reference (d), addresses the valves that are used exclusively for containment purging.

Information relative to the containment differential pressure operation has previously been submitted to the Commission in Reference (c). Additionally, a simplified flow diagram of the primary containment atmospheric control system which shows the valves in question is provided for your information (Figure 1).

B. Justification

The following information is provided to justify purging as requested on page 3, items 2 and 3 of Reference (b).

1. Determine if the purge isolation valves are capable of closing against the dynamic forces of a design basis loss-of-coolant accident.

The Yankee Atomic Electric Company Nuclear Services Division has reviewed the applicable design information and has verified that the following valves are capable of operating when subjected to the dynamic forces of a design basis loss-of-coolant accident:

V16-19-6A, V16-19-6B, V16-19-7A*, V16-19-7B*, V16-19-8, V16-19-9*, V16-19-10*, V16-19-23, V16-19-6 and V16-19-7*

All valves are butterfly valves which have a temperature and pressure rating well in excess of the temperature and pressure conditions that would be experienced inside the reactor containment following a design basis loss-of-coolant accident. The valves are operated by actuators located outside reactor containment. Each

*These valves are used exclusively for containment purging.

actuator consists of a pneumatic operator with spring-return to insure fail-safe closure in the event of loss of air to the air cylinder. Because the valves are butterfly type, it is our opinion, and also the manufacturers, that any dynamic forces experienced during closure would be equal and opposite across the face of the disc, and therefore, have little affect on the torque required for closing. Design information, extracted from original specifications and drawings, is included in Figure 2.

2. Evaluate the impact of purging during operation on ECCS performance.

Containment back pressure is not necessary to assure proper operation of the emergency core cooling systems at Vermont Yankee.

3. Evaluate the radiological consequences of any design basis accident requiring containment isolation occurring during purge operations.

Reference (c) provides an evaluation of the system(s)/valves involved in the containment delta P operation and demonstrates the negligible radiological dose increment resulting from postulated LOCA conditions.

4. Evaluate the containment purge and isolation instrumentation and control circuit designs.

Vermont Yankee has reviewed the circuitry associated with the valves listed above and has determined that any one manual override, maintenance operation, or test to verify operational availability, does not impair the functional ability of the isolation control system to respond correctly to essential monitored variables.

II. Manual Override of Safety Actuation Signals

As required by page 4 of Reference (b), we have reviewed the design of all safety actuation signal circuit which incorporate manual override features at Vermont Yankee. As a result of this review, we have determined that the use of a manual override feature for one safety actuation signal does not also cause the inadvertent bypass of any other safety actuation signal. In addition, we have examined whether sufficient physical features were provided to facilitate adequate administrative controls of the manual override features, and that the use of each such manual override is adequately annunciated in the plant control room. From this examination, Vermont Yankee has identified a few manual override features in safety actuation signal circuits that do not in all respects meet the requirements identified above.

We, therefore, are prepared to commit to the incorporation of additional physical features (key lock switches) to facilitate adequate administrative controls and/or annunciation in the plant control room of the few nonconforming manual override circuits. It is our intent to develop the necessary design documents and effect installation during the 1979 refueling outage. Since Vermont Yankee has performed the necessary review and has assurance that operation of a manual override feature will only affect intended safety functions, operation of manual override features will not be prohibited.

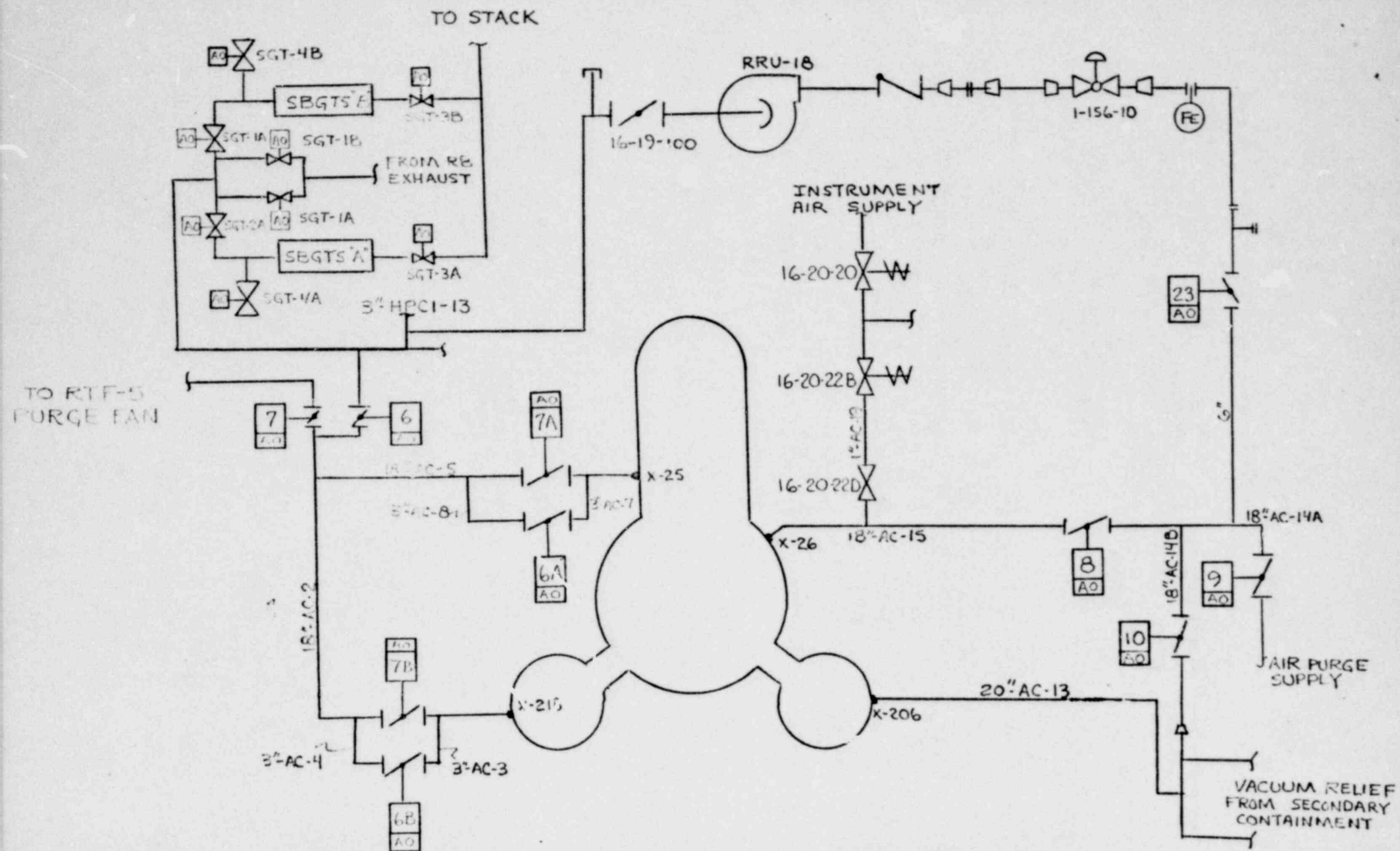


FIGURE 1

PURGE & VENT VALVES

ALLIS-CHALMERS
WAFFER STYLE STREAMSEAL BUTTERFLY VALVES

VALVE NUMBER	VALVE SIZE	DESIGN TEMP. RATING	DESIGN PRESS. RATING	T. S. REQ'D CLOSURE TIME
6-19-6A & B	3"	300°F	150 psi	10 sec. max.
6-19-7A, 7B, 8, 9, & 10	18"	300°F	150 psi	10 sec. max.
16-19-23	6"	300°F	150 psi	10 sec. max.
16-19-6	8"	200°F	150 psi	10 sec. max.
16-19-7	18"	200°F	150 psi	10 sec. max.

FIGURE 2