

Donald C. Shelton
Vice President - Nuclear
Davis-Besse

300 Madison Avenue
Toledo, OH 43652-0001
(419) 249-2300

Docket Number 50-346

License Number NPF-3

Serial Number 2046

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Subject: Change to Technical Specification Bases 3/4.4.11, High Point
Vents

Gentlemen:

The attached provides a proposed change to the Davis-Besse Nuclear Power Station (DBNPS) Unit No. 1, Operating License Number NPF-3, Appendix A, Technical Specification (TS) Bases Section 3/4.4.11, High Point Vents. Toledo Edison (TE) previously proposed a change to these TS Bases via letter dated December 18, 1991 (TE letter Serial Number 1970). Subsequent to the December 18, 1991 submittal, TE identified that the discussion of fire protection aspects included in the proposed Bases wording was inconsistent with the manner in which other TSs handle fire protection aspects. Accordingly, the discussion of fire protection aspects should be removed from the proposed Bases change. This letter completely supersedes the December 18, 1991 submittal.

The proposed change adds a discussion of the overall operability requirements for the pilot-operated relief valve (PORV) and block valve in the DBNPS system configuration. This change is submitted in accordance with Toledo Edison's (TE) response (TE letter Serial Number 1884, dated December 21, 1990) to NRC Generic Letter 90-06, Resolution of Generic Issue 70, "Power Operated Relief Valve and Block Valve Reliability." Generic Letter 90-06 stated that although PORVs may not have been classified as safety related components that are used to mitigate a design basis accident, and therefore, may have not been included in the TS as part of the licensing basis, this was not an acceptable basis for not incorporating TS requirements for the PORV.

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As described in TE letter Serial 1884, TE has appropriate shutdown requirements for the PORV and block valve, however, the Bases discussion should be expanded. The attached proposed change provides a description of the overall operability requirements for the PORV and block valve in the DBNPS configuration.

Background

The pressurizer is a cylindrical vessel that is connected by the pressurizer surge line to the Reactor Coolant System (RCS) loop 2 hot leg (see attached figure). The pressurizer establishes and maintains RCS pressure within prescribed limits and provides a surge chamber and a water reserve to accommodate changes in reactor coolant volume during operation. RCS pressure is decreased by injection of reactor coolant from the Reactor Coolant Pump (RCP) 2-2 discharge via the pressurizer spray nozzle. RCS pressure is increased by energizing immersion type pressurizer heaters.

Two American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code safety valves (RC 13A and RC 13B) and the PORV (RC 2A) are connected to the top of the pressurizer, and provide overpressure protection for the RCS. Each of the code safety valves discharges to the containment atmosphere. The PORV discharges to the pressurizer quench tank.

As described in TS Bases 3/4.4.2 and 3/4.4.3, Safety Valves, the PORV lift setpoint is higher than the Reactor Protection System (RPS) high pressure trip setpoint, but lower than the lift setpoint for the code safety valves. Therefore, the PORV should not open on any anticipated transient. The control rod group withdrawal accident will result in the most limiting high pressure in the RCS. The analysis of this transient does not take credit for the PORV opening. Therefore, the PORV provides additional margin for an overpressure transient and limits the lifting frequency of the code safety valves.

The motor-operated PORV block valve (RC 11) provides the capability to remotely isolate the PORV in the event that it fails open, fails to reseal, or is leaking. This prevents uncontrolled depressurization and excessive leakage of reactor coolant.

The primary means of depressurization during a steam generator tube rupture (SGTR) accident is the pressurizer spray. If pressurizer spray is not available, then the DBNPS Emergency Procedures direct the use of the pressurizer vent line (RC 239A and RC 200) as the means of RCS pressure reduction. The use of the pressurizer vent line for recovery from a SGTR or for a natural circulation cooldown (pressurizer spray not available) has been chosen because a restricting orifice in the vent line limits flow to provide a controlled pressure reduction and prevent rupture of the pressurizer quench tank rupture disk. Although not the primary or secondary means to depressurize during a SGTR, the capability to remotely open the PORV from the control room provides a backup method of depressurizing.

The DBNPS has two steam driven main feedwater pumps, two steam driven auxiliary feedwater pumps, and an electric motor driven feedwater pump to ensure that water can be delivered to the secondary side of the steam generators. During a non-design basis total loss of all feedwater event, the PORV flow path (RC 2A and RC 11) is one method of providing a relief path during "feed and bleed" cooling.

Proposed Bases Change

Based on the above discussion, the proposed Bases change reflects the following operability considerations:

1. Section 5.5.10.2 of the DBNPS Updated Safety Analysis Report (USAR) states: "The Reactor Coolant System (RCS) High Point Vent System provides vents on each of the two hot legs and on the pressurizer to vent non-condensable gases to aid in refilling the RCS and promotes natural circulation flow for core cooling." The existing Bases wording reflects the USAR. However, the existing wording is clarified in the proposed Bases change.
2. The PORV flow path (RC 2A and RC 11) provides a relief path during the feed and bleed mode of operation. A discussion of this function has been added to the proposed Bases.
3. If pressurizer spray is not available, the pressurizer vent line (RC 239A and RC 200) is the preferred means for a Reactor Coolant System pressure reduction for recovery from a steam generator tube rupture or natural circulation cooldown. If this flow path is not available, or too slow, the PORV flow path is available for use. A discussion of this function has been added to the proposed Bases.
4. The PORV limits the lifting frequency of the pressurizer code safety relief valves. The PORV block valve provides positive shutoff capability should the PORV become inoperable. A discussion of these functions have been added to the proposed Bases.
5. The title of the proposed Bases section change has been revised to be consistent with that of the associated TS, and its numbering corrected.

Conclusion

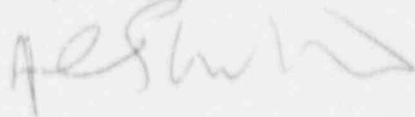
This proposed Bases change to TS 3/4.4.11 provides an expanded discussion of the overall operability requirements for the PORV and block valve in the DBNPS system configuration, and completes TE's response to Generic Letter 90-06.

Toledo Edison requests that this TS Bases change be issued by the Nuclear Regulatory Commission (NRC) Staff by December 30, 1992.

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If you have any questions, please contact Mr. R. W. Schrauder,
Manager - Nuclear Licensing at (419) 249-2366.

Very truly yours,



MKL/dlm

attachments

cc: A. B. Davis, Regional Administrator, NRC Region III
J. B. Hopkins, NRC/NRR DB-1 Senior Project Manager
W. Levis, NRC Region III, DB-1 Senior Resident Inspector
J. R. Williams, Chief of Staff, Ohio Emergency Management Agency,
State of Ohio (NRC Liaison)
Utility Radiological Safety Board