

Docket No. 50-346

License No. NPF-3

Serial No. 905

February 1, 1983



RICHARD P. CROUSE
Vice President
Nuclear
(419) 259-5221

Director of Nuclear Reactor Regulation
Attention: Mr. John F. Stolz
Operating Reactor Branch No. 4
Division of Operating Reactors
United States Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Stolz:

We are attaching three (3) copies of the detailed analysis of the safety/relief valve discharge system for the Davis-Besse Nuclear Power Station Unit No. 1. This information is being submitted to supply the NUREG-0737 requested information on EPRI relief and safety valve testing per Item II.D.1.2 and II.D.1.3 for Toledo Edison.

The report indicates that the safety relief valves, PORV and block valve will function properly for all expected operating and accident conditions. Three supports on the PORV discharge piping are described in the attached report as requiring modifications. The attached February 2, 1983 letter from Teledyne to Toledo Edison describes the magnitude of the concern, which is minimal, and does not require modification to justify continued operation. Toledo Edison will further evaluate any modifications necessary to meet code requirements. No significant system safety concerns are raised by the attachments concerning system operability.

In summary, the PORV valve and the blocking valve in the original position in the valve room will function properly for all expected operating and accident conditions. The PORV meets the standard of NUREG-0737, Item II.D.1. The safety relief valves (2), in the new location mounted on the pressurizer, meet the standards of NUREG-0737 Item II.D.1. The safety relief valves will function properly under all expected operating and accident conditions.

Very truly yours,

A handwritten signature in cursive script, appearing to read 'R. Crouse'.

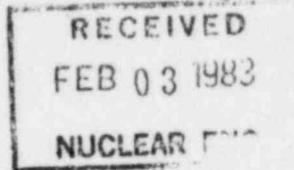
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attachment

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cc: DB-1 NRC Resident Inspector

THE TOLEDO EDISON COMPANY EDISON PLAZA 300 MADISON AVENUE TOLEDO, OHIO 43652

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PDR ADOCK 05000346
P PDR



February 2, 1983
5639-27

Mr. Marvin Foust
Toledo Edison Co.
Edison Plaza
300 Madison Avenue
Toledo, OH 43652

Subject: Davis-Besse PORV Line Supports

Reference: Technical Report TR-5639-2, Rev. 0, Davis-Besse Analysis and Evaluation of the Safty/Relief Valve Discharge System per NRC NUREG-0737, January 1983.

Dear Mr. Foust:

The referenced technical report describes three supports on the PORV discharge system that will require modification. This letter is to show the supports are adequate as is for interim operation of the plant with the following explanation of each:

1. Hanger 30-GCC-8-H2 is a Z direction snubber on the PORV discharge elbows. The support has adequate strength and meets code requirements. The recommended change is to move the attachment point, which would provide additional stiffness to the PORV valve support, and prevent an over stress condition in the 2½ inch elbow directly upstream of the PORV.

TED has provided information from the material certification of the SA-403 WP316 stainless steel elbow. The yield strength (Sy) is 72.6 ksi and the ultimate strength (Su) is 85.8 ksi, both at room temperature. The ASME Code shows a minimum Sy of 30 ksi at room temperature and 18.5 ksi at 650°F.

Using the ratio of $\frac{18.5}{30}$ (the correction for the 650°F temperature) times 85.8 ksi and 72.6 ksi gives Sy=44.8 ksi and Su=52.9 ksi. The basic stress intensity limits (S_m) used in ASME Section III have the following relationship.

Toledo Edison Company
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<u>STRESS INTENSITY</u>	<u>TABULATED VALUE*</u>	<u>Sy</u>	<u>Su</u>
Pm	Sm	$\frac{2}{3} S_y$	$\frac{1}{3} S_u$
Primary Membrane	16.7 ksi	29.3 ksi	17.6 ksi
PL	1.5 Sm	Sy	$\frac{1}{2} S_u$
Local Primary Membrane	25.1 ksi	44.8 ksi	29.8 ksi

The stress in question is PL and the calculated value is 27 ksi for D.W., seismic and blowdown which is greater than the allowable value of 25.1 ksi in the Code, but less than actual material value of $\frac{1}{2} S_u$ which is 29.8 ksi. Therefore, the actual material used has an acceptable allowable stress and the elbow is acceptable for interim plant operation.

- Hanger 30-GCC-8-H5 is a single vertical snubber and hanger 30-GCC-8-H17 is a double vertical strut. The H5 hanger is overstressed and is located between hanger H17 and an anchor. Most of the load from H5 would be transferred to hanger H17. Analysis of H17 with the load of H5 added in shows the steel and welds are acceptable but the anchor bolts will not meet the requirements of NRC Bulletin 79-02. The required factor of safety is 4.0 and the actual one is near 3.5. This is judged to be adequate for interim operation of the PORV system.

*Appendix I of ASME Code, 1973 Addenda

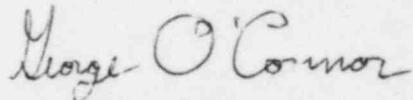
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If you have any questions or would like further clarification,
please call me.

Sincerely,

TELEDYNE ENGINEERING SERVICES



George E. O'Connor
Assistant Project Manager

GEO/ao
Enclosure

cc: D.F. Landers (TES)
G.A. Carpenter (TES)
R.H. Howard (TES)