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FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
AUTH.NAME AUTHOR AFFILIATION
WILLIAMS,J.W. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
VARGA,S.A. Operating Reactors Branch 1

SUBJECT: Forwards addl info re 54-inch & 48-inch containment purge valves,per 840112 request.Stress levels for closing valves from blocked position provideed in Henry Pratt stress repts d&d 820818 & 20,per util 820917 ltr.

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FPL
FLORIDA POWER & LIGHT COMPANY

April 2, 1984
L-84-86

Office of Nuclear Reactor Regulation
Attention: Mr. Steven A. Varga, Chief
Operating Reactor Branch #1
Division of Licensing
U.S. Regulatory Commission
Washington, D.C. 20555

Dear Mr. Varga:

Re: Turkey Point Units 3 & 4
Docket Nos. 50-250 & 50-251
<u>Vent/Purge Valve Operability</u>

By your letter dated January 12, 1984, you requested the following additional information on the Turkey Point 54" and 48" containment purge valves:

1. Evidence that the dynamic torque coefficients (C_{TS}) used to determine the dynamic torques (T_D) based on the worst case valve configuration apply to the Henry Pratt Model RA 48 and 54 inch valves;

2. Information which demonstrates that the stress levels in all valve parts considered are within the design stress allowables when the valves are operated from the blocked positions; and,

3. Information which shows that conservative safety factors were applied to C_T (straight pipe) valves when used to predict T_D's in an RA valve that included an elbow in the piping configuration.

In response to this request, the following information is provided:

1. The Turkey Point RIA valves contain symmetric discs. Model testing on this style disc was performed using straight pipe. FPL letter, L-83-120, dated March 4, 1983, transmitted Henry Pratt's RIA valve stress reports (Rev.1) dated September 15, 1981 and September 18, 1981. Pages 3 and 5 of these reports show that worst case valve configurations were considered.

   The torques provided in the September 1981 reports provide an effective safety factor on straight pipe model C_T's of greater than 1.5. The inboard containment purge valves are installed "in-plane" with regard to the upstream elbows; therefore, the C_T used in this analysis is adequate with respect to the constraints expressed in your January 12, 1984 letter. The outboard containment purge valves are separated from the inside valve by approximately 10 feet of straight pipe which would tend to stabilize flow conditions. Consequently, the C_T values used are appropriate for the Turkey Point Units 3 & 4 installation.

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2. The stress level information referenced in your January 12, 1984 letter was for closing the valves from a fully open position. Stress levels for closing the 54 and 48 inch valves from a blocked position were provided in Henry Pratt's stress reports dated August 18, 1982 and August 20, 1982. These reports were forwarded to you by FPL letter L-82-407, dated September 17, 1982. These reports show that only the 54 inch valve operator bolt stresses were greater than allowable. The calculated combined stress in the operator bolts was 22,708 pounds per square inch. The allowable stress for this material is 22,200 pounds per square inch. These reports also show that the 54 inch valve trunnion bolt stresses are near the allowable. Since the stresses on the operator and trunnion bolts exceed or approach the allowables, these bolts will be replaced as proposed in the August 1982 Henry Pratt reports. We have these bolts on order, and plan on installing them in the next refueling outage for Units 3 and 4.

   Please find attached a justification for interim operation of these valves until the bolts can be replaced.

3. Response to this question is covered in Item No. 1 above.

If you have any further questions, please contact us.

Very truly yours,

J.W. Williams, Jr.
Vice President
Nuclear Energy

JWW/DJF/SAV/cas

Attachments

cc: J.P. O'Reilly, Region II (w/att.)
Harold F. Reis, Esquire

TURKEY POINT UNITS 3 & 4

CONTAINMENT PURGE VALVES
JUSTIFICATION FOR INTERIM OPERATION

The 54 inch containment purge valves can continue to be used until the replacement operator bolts are received and installed for the following reasons:

1. The bolt allowable stress reported by Pratt is below that given in Table 5A-1 of the FSAR which shows the allowable equal to the yield strength. The yield strength for the bolts is much higher than the Pratt reported stress.

2. The loading conditions used in the Pratt analysis exceed those in the FSAR. The earthquake and LOCA loads are not combined in the FSAR to determine component stresses; however, the Pratt analysis considers these combined loads.

3. The purge valves are not required by the FSAR to meet ASME Section III requirements (particularly on stress allowables) because the original valve was purchased before nuclear valve requirements existed.

4. As stated in the FSAR: "On the basis of historical or statistical seismic activity, Turkey Point is located in a seismically inactive area, far from any recorded damaging shocks. Even though several of the larger historical earthquakes may have been felt in southern Florida, the amount of ground motion caused by them was not great enough to cause damage to any moderately well built structure. The Uniform Building Code (1964 edition, Volume I, as approved by the International Conference of Building Officials) designates the area as Zone 0 on the map entitled Map of the United States Showing Zones of Approximately Equal Seismic Probability." The stress calculations for the 54" valve assume worst case conditions in that a LOCA and earthquake are postulated to occur simultaneously during containment purge operations. Since purge time is limited and the probability of either an earthquake or a LOCA is small, FPL believes that interim operation of the purge system is justified pending bolt replacement.