Consumers Power Company

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Director, Nuclear Reactor Regulation
Att Mr Dennis M Crutchfield, Chief
Operating Reactors Branch No 5
US Nuclear Regulatory Commission
Washington, DC 20555

DOCKET 50-155 - LICENSE DPR-6 -
BIG ROCK POINT PLANT - CONTAINMENT
PURGE AND VENT VALVE MECHANICAL
OPERABILITY

NRC letter dated February 27, 1981 requested additional information with respect to the mechanical operability of the containment purge and vent valves. Attachment 1 to this submittal provides Consumers Power Company responses to these requests in the same format as presented in that letter's enclosure.

Gregory C Withrow (Signed)

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CC Director, Region III, USNRC
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Attachment - 3 pages

Attachment 1

CONSUMERS POWER COMPANY RESPONSE TO:

NRC REQUEST FOR ADDITIONAL INFORMATION
BIG ROCK POINT NUCLEAR PLANT
CONTAINMENT PURGING DURING NORMAL PLANT OPERATION
MECHANICAL OPERABILITY DEMONSTRATION

1.0 Allis Chalmers 24.0" Butterfly Valves

1.1 Describe the extent to which the valve assembly is seismically qualified?

Response: The original purchase documentation did not include specific seismic design criteria. However, the valves have been certified to withstand the design basis LOCA stresses imposed on them during closure without incurring any disabling damage. Seismic qualification will be addressed in Systematic Evaluation Program Topic III-6, entitled, "Seismic Design Considerations".

1.2 Described the extent to which the pilot solenoid valves are seismically qualified and environmentally qualified for long term exposure to the normal plant environment. If the purge valves are to be operative post-LOCA, described the extent to which the solenoid valves are environmentally qualified for the LOCA environment. Do the elastomeric parts, solenoids, etc. have a qualified design life where periodic replacement of parts is required?

Response: The solenoid valves for all the ventilation valves are located outside containment. Each pair of solenoid valves control two valves (eg, SV 9151 and 52-both supply valves; SV 9153 and 54-both exhaust valves). The containment is normally ventilated; therefore, the purge valves are required to operate post-LOCA for containment isolation and vacuum relief functions.

Environmental qualification information is provided for the solenoid valves by Consumers Power Company submittals dated October 31, 1980; January 30, 1981; and March 2, 1981 (pages 14, 146, 147 and 148) which provide the Environmental Qualification of Electrical Equipment bases. The preventative maintenance program rebuilds the solenoid valves about every five years during a refueling outage.

The solenoid valves are located on the C-26 panel in the ventilation shed. The panel is seismically qualified as outlined in Attachment I of Consumers Power Company submittal dated January 22, 1981.

1.3 Describe the extent to which the operators are seismically qualified and environmentally qualified for long term exposure to the normal plant environment? If the purge valves are to be operative post-LOCA, describe the extent to which the operators are environmentally qualified for the LOCA environment. Do the elastomeric parts in the operator have a qualified design life where periodic replacement is required?

Response: The response for item 1.2 identified that the solenoid valves for all of the ventilation valves are located outside containment. This is also true for the location of the operators for all of the ventilation valves. This reduces the harshness of the parameters associated with the LOCA environemtn.

Seismic and environmental qualification for the valve operators will be addressed in Systematic Evaluation Program Topics III-6 and III-11.

1.4 Do the elastomeric parts in the valve body have a qualified design live? Are they required to be replaced periodically?

Response: A qualified design life for the valve body elastomeric parts has never been established. However, the butterfly valve seats are on a preventative maintenance program which replaces them every two to three years during a refueling outage.

1.5 Have the manufacturer's recommended preventive maintenance instructions (lubrication, etc.) been reviewed for the valve, operator and solenoids and are they being followed?

Response: The replacement of the valve seats and rebuilding of the solenoids are addressed in the responses to items 1.2 and 1.4. No lubrication of the operator is required. The above two preventative maintenance items are more restrictive that the manufacturer's recommended preventative maintenance practices.

1.6 Provide an assessment of the structural capability of any ducting or piping in the purge system which is upstream or downstream of the valves and is exposed to the flow condition associated with the LOCA and the seismic event. The staff is particularly interested in the effects that loose debris from the pipe or duct system may have on the closure capability of these valves.

Response: The redundancy provided in the ventilation system by the use of in-series butterfly and swing check valves provides assurance of containment isolation in the event of damage to a valve. The possibility of loose debris from ducting or piping failure resulting in valve inoperability is considered low. Containment isolation would likely be guaranteed because the butterfly valves would block debris before it could reach the swing check valves. If preventative measures such as screening or grating were used, these preventative devices could become loose debris. Therefore, we do not propose any changes from the current design.

2.0 <u>Atwood & Morril 24.0" Swing Check Valves</u>

2.1 Describe the extent to which the valve assembly is seismically qualified?

Response: The response for item 1.1 applies here also.

2.2 Describe the extent to which the pilot solenoid valves are seismically qualified and environmentally qualified for long term exposure to the normal plant environment. If the purge valves are to be operative post-LOCA, describe the extent to which the solenoid valves are environmentally qualified for the LOCA environment. Do the elastomeric parts, solenoids, etc. have a qualifed design life where periodic replacement of parts is required?

Response: The response for item 1.2 applies here also.

2.3 Describe the extent to which the operators are seismically qualified and environmentally qualifed for long term exposure to the normal plant environment? If the purge valves are to be operative post-LOCA, describe the extent to which the operators are environmentally qualified for the LOCA environment. Do the elastomeric parts in the operator have a qualified design life where periodic replacement is required?

Response: The response for item 1.3 applies here also.

2.4 Do the elastomeric parts in the valve body have a qualified design life? Are they required to be replaced periodically?

Response: A qualified design life for the valve body elastomeric parts has never been established. However, the swing check valve seats are on a preventative maintenance program which requires cleaning and inspection of the seat and seating surface every two to three years during a refueling outage.

2.5 Have the manufacturer's recommended preventive maintenance instructions (lubrication, etc.) been reviewed for the valve, operator and solenoids and are they being followed?

Response: The inspection of the valve seats and rebuilding of the solenoids are addressed in the responses to items 2.2 and 2.4. No lubrication of the operator is required. The above two preventative maintenance items are more restrictive than the manufacturer's recommended preventative maintenance practices.

2.6 Provide an assessment of the structural capability of any ducting or piping in the purge system which is upstream or downstream of the valves and is exposed to the flow condition associated with the LOCA and the seismic event. The staff is particularly interested in the effects that loose debris from the pipe or duct system may have on the closure capability of these valves.

Response: The response for item 1.6 applies here also.