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December 21, 1983

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Subject: Dresden Station Units 2 and 3  
Quad Cities Station Units 1 and 2  
Operability of Containment Purge and  
Vent Valves; Response to on NRC Safety  
Evaluation of Containment Vent and  
Purge Valves  
NRC Docket Nos. 50-237/249 & 50-254/265

Reference (a): D. M. Crutchfield letter to D. L. Farrar  
dated November 4, 1983

Dear Mr. Denton:

The referenced letter stated that based on the staff's Safety Evaluation Report, the testing and information supplied to the NRC by Commonwealth Edison (CECo) failed to demonstrate operability of the containment purge and vent valves. As a result of the conclusion drawn, the staff directed CECo to seal the valves closed in accordance with SRP Section 6.2.4. III. 6.F and verify the valves to be closed at least once every 31 days or demonstrate the operability of the containment purge and vent valves in order to permit their continued use during operating modes 1, 2, 3 and 4.

The staff should understand that CECo cannot operate with the large containment vent and purge valves "sealed" closed during modes 1, 2, 3, and 4, e.g. at all times except during refuel outages. We must operate these valves in order to inert the containment, de-inert the containment, establish pressure differential between the drywell and suppression chamber, reduce containment oxygen content, and to reduce pressure in the containment. Attachment 1 provides a detailed list of the operating evolutions, the procedures used to perform the evolutions, and the containment vent and purge valves required for performance of the evolutions. These are Safety-Related evolutions that are required to be performed to meet technical specification requirements, mitigate the consequences of postulated accidents (LOCA), allow containment access during outages and when containment is not required, and to avoid a spurious scram and ECCS initiation. Because the containment vent and purge valves are administratively controlled by procedures outlined in Attachment 1, venting and purging are thus limited to the maximum extent possible while the reactor is in operation.

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However, as outlined above, the purge and vent valve must be opened for certain evolutions. Since valve openings are controlled by procedures, the valves cannot be inadvertently opened. Therefore, the valves need not be sealed closed. The stations are operating in a conservative manner and will continue to operate in this manner.

CECo has reviewed the NRC's Safety Evaluation Report provided in the reference. In general we find it to contain several inconsistencies. Therefore the basis for the safety evaluation is unclear. CECo would like clarification of paragraphs 4.1, 4.2 and 4.3 of the SER together with the reference material on which the evaluation is based. The sharing of this information will greatly help us in evaluating the accuracy of our operability studies. The requested clarifications are detailed in Attachment 2.

It is unclear to CECo why the staff would require the stations to seal closed all of the containment purge and vent valves when the staff concluded in the referenced SER, that CECo's operability studies may only be unconservative for three specific valves which contain out of plane elbows. Again details are provided in Attachment 2.

CECo is presently in the process of reevaluating the operability studies and information that was supplied to the staff. CECo plans to complete the reevaluation within 60 days, upon receipt of information requested from the staff.

The ensuing paragraphs provide responses to specific questions/comments that were in the NRC SER directed to CECo.

In item 4.6 of the safety evaluation the staff asked CECo to confirm that seismic qualification of the purge and vent valves was handled by the Systematic Evaluation Program (SEP) and I.E. Bulletin 79-14. In our review of the SEP program, it appears that there were no specific studies performed that addressed the seismic qualification of the subject valves. The piping and valves are supported in accordance with original seismic design criteria. Modifications were performed as necessary to meet the requirements of I.E. Bulletin 79-14.

In Item 4.7 of the Safety Evaluation, it is mentioned that valves AO-1601-56, 60, 63 and 55 are assumed closed during modes 1, 2, 3 and 4. This is not true. The correct information is provided as follows:

<u>Valve No.</u>	<u>Function</u>	<u>Remarks</u>
AO-1601-55	Drywell and suppression chamber nitrogen purge inlet.	This is a 4" gate valve that remains open during normal operation to maintain pressure differential between the drywell and suppression chamber.

<u>Valve No.</u>	<u>Function</u>	<u>Remarks</u>
A0-1601-56	Suppression Chamber purge inlet.	This 18" butterfly valve remains open during normal operation to maintain pressure differential between the drywell and suppression chamber.
A0-1601-60	Suppression chamber vent outlet.	This 18" butterfly valve is used to inert and de-inert the suppression chamber.
A0-1601-63	Drywell and suppression chamber vent outlet to SBGTS.	This is a 6" butterfly valve used to vent the containment to inert, de-inert, relieve pressure, reduce oxygen content, and to establish pressure differential between the drywell and suppression chamber.

From the above table, A0-1601-55 and A0-1601-63 should not be considered in this issue since 1601-55 is a gate valve and 1601-63 is only a 6" diameter valve. This is the same reason that the 2" bypass valves around A0-1601-60 and A0-1601-23 (valves A0-1601-61 and A0-1601-62, respectively) are not considered.

In summary CECO is reassessing the operability studies that were performed. CECO is directing this review to the three valves that appear to be unconservative, 1601-23 (Dresden 2, 3) and 1601-24 (Quad Cities 1). These valves have elbow-shaft out of plane configurations. CECO plans to have the reviews completed within 60 days contingent upon receipt of information requested in this letter.

To the best of my knowledge and belief, the statements contained herein are true and correct. In some respects, these statements are not based on my personal knowledge but upon information furnished by other Commonwealth Edison and contractor employees. Such information has been reviewed in accordance with company practice and I believe it to be reliable.

If you have any questions regarding this matter, please contact this office.

Very truly yours,



B. Rybak

Nuclear Licensing Administrator

cc: R. Gilbert (NRR)  
R. Bevan (NRR)  
NRC Resident Inspector - Dresden  
NRC Resident Inspector - Quad Cities

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QUAD-CITIES STATION CONTAINMENT  
VENTING and PURGING

<u>Operating Evolution Title</u>	<u>QOP Procedure</u>	<u>Vent and Purge Valves Operated</u>
a. Drywell Pressure Relief Through SBGTS	1600-1	AO-1601-63 and AO-1601-62
b. Suppression Chamber Pressure Relief Through SBGTS	1600-2	AO-1601-63 and AO-1601-61
c. Drywell Pressure Relief Through Vent. System	1600-3	AO-1601-24 and AO-1601-62
d. Suppression Chamber Pressure Relief Through Vent. System	1600-4	AO-1601-24 and AO-1601-61
e. Inerting Using Nitrogen Steam Vaporizer with SBGTS	1600-5	AO-1601-63, 23, 21 and 55 for drywell; AO-1601-63, 60, 56, and 55 for suppression chamber.
f. Inerting Using Steam Vaporizer with Vent. System	1600-6	AO-1601-24, 23, 21 and 55 for drywell; AO-1601-24, 60, 56, and 55 for suppression chamber.
g. De-inerting Using SBGTS	1600-7	AO-1601-60, 62, 63, 21, 23, 22, and 56
h. De-inerting Using Vent. System	1600-8	AO-1601-24, 62, 21, 22, 23, 56 and 60
i. Reduce Containment Oxygen Content During Power Operation	1600-10	AO-1601-61 and 63; use nitrogen makeup.
j. Post-Accident Containment Venting	1600-13	AO-1601-61, 63 for suppression chamber; AO-1601-62, 63 for drywell.

QUAD-CITIES STATION CONTAINMENT  
VENTING and PURGING

<u>Operating Evolution Title</u>	<u>QOP Procedure</u>	<u>Vent and Purge Valves Operated</u>
k. Drywell-Suppression Chamber Differential Pressure Using Nitrogen Makeup	1600-14	AO-1601-61 and 63 (SBGTS) or AO-1601-61 and 24 (Vent.), with nitrogen makeup. Also, use AO-1601-21 and 55 if need nitrogen purge.
l. Differential Pressure Compressor Startup/Shutdown	1600-15 1600-16 1600-21 1600-22	AO-1601-55 and 56.
m. Inerting Using Electric Nitrogen Vaporizers	1600-19 1600-20	If use SBGTS; AO-1601-63, 23, 21, 55, 60, and 56. If use Vent. System; AO-1601-24, 23, 21, 55, 60, and 56.
n. Containment Venting and Purging During Extended Shutdown	1600-23	AO-1601-22, 56, 60, and 24 for the suppression chamber; AO-1601-22, 21, 23, and 24 for the drywell.

## Attachment 2

Paragraph 4.1 - This paragraph qualitatively compares the T<sub>D</sub> valves predicted by Commonwealth Edison based upon test data to valves predicted by Henry Pratt Valves, Inc. for Prairie Island, and to valves "available for other valve designs". This information needs to be reviewed by CECO to determine the applicability of such a comparison. In particular, definition of the operating conditions from which the other information is derived needs to be made.

Paragraph 4.2 - This paragraph appears to contradict paragraph 4.1 in part. The statement is made that the T<sub>D</sub> valves provided by CECO is conservative except for those three valves (out of 16) which have elbow-shaft out of plane configurations. This suggests that these three valves are only ones unacceptable "as is" in the SER.

Paragraph 4.3 - This paragraph refers to Instrument Society of America (ISA) standard S39.4. ISA literature suggests that this standard was superceded in 1980 by standard ISA-S75.02 (1981). Our architect/engineer NUTECH has obtained a copy of this, and will review it against the 10 pipe diameter criterion assumed by NUTECH in earlier work.

Paragraph 4.4, 4.5 - Because of the ambiguity of paragraphs 4.1, 4.2, and 4.3, CECO believes that there is no basis for global statements as contained in these paragraphs. We believe that the only questionable valves in light of 4.1 and 4.2, are valves 1601-23 (Dresden 2, 3) and 1601-24 (Quad Cities 1).