

April 15, 1988

Docket No. 50-255

Mr. Kenneth W. Berry
Director, Nuclear Licensing
Consumers Power Company
1945 West Parnall Road
Jackson, Michigan 49201

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Dear Mr. Berry:

SUBJECT: RESPONSE TO IE BULLETIN 80-11, "MASONRY WALLS" (TAC NO. 42915)

We have reviewed your responses dated November 8, 1982, and December 29, 1982, to our request for information dated September 7, 1982. We find that we need additional information. Enclosure 1 provides the specific requests. Enclosure 2 provides our basis for question 3 and Enclosure 3 provides our basis for question 4. Please respond within 90 days of receipt of this letter.

Since the request is specific to Palisades Plant and affects fewer than ten respondents, OMB clearance is not required under P.1. 96-511.

Sincerely,

Original signed by

Thomas V. Wambach, Project Manager
Project Directorate III-1
Division of Reactor Projects - III, IV, V
& Special Projects

Enclosures:
As stated

cc: See next page

TVM
PM/PD31:DRSP
TWambach:lt
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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555

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Sincerely,

A handwritten signature in cursive script that reads "Thomas V. Wambach".

Thomas V. Wambach, Project Manager
Project Directorate III-1
Division of Reactor Projects - III, IV, V
& Special Projects

Enclosures:
As stated

cc: See next page

Mr. Kenneth W. Berry
Consumers Power Company

Palisades Plant

cc:

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REQUEST FOR ADDITIONAL INFORMATION
MASONRY WALL DESIGN, IE BULLETIN 80-11
PALISADES PLANT
DOCKET NO. 50-255

1. With reference to the reinforcement in masonry walls, the ACI 531-79 Code (Ref. 1) specifies that the minimum area of reinforcement in a wall in either direction, vertical or horizontal, shall be 0.0007 (0.07%) times the gross cross-sectional area of the wall and that the minimum total area of steel, vertical and horizontal, shall not be less than 0.002 (0.2%) times the gross cross-sectional area. In view of this, clarify whether the reinforced walls at this plant meet the above criteria.
2. If the joint reinforcement is used to resist tension in a vertically reinforced wall, it should follow the working stress design method which limits its allowable to 30 ksi. Please clarify whether this criterion has been satisfied. If this criterion is not satisfied, identify all affected walls along with the calculated stress value for each wall.
3. Indicate any wall that has only joint reinforcement (horizontal reinforcement), no vertical reinforcement, and may have been qualified using the tensile resistance of the joint reinforcement. (See enclosure 2)
4. With regard to the arching action technique, the use of the arching action theory to qualify unreinforced masonry walls is not proven. (See enclosure 3) Please provide additional justification for not modifying walls 107.5, 105.14, and 321.1.
5. In Response No. 11 of Reference 3, a sample calculation was provided for beam brace modification for wall C-104.5 in which the modified wall was analyzed as a horizontal beam strip. However, drawing FSK-C-104.5 (Q) (1) shows that the two vertical sides of the wall are free. Since the vertical sides are free, please provide justifications for the horizontal beam strip assumption.
6. In Response No. 4 of Reference 3, a total of four walls (C-107.10, C-107.28, C-107.31, C-108.11) were identified to be removed. Please provide the status of these walls.
7. Reference 3 indicated that plate analysis was used to qualify a number of walls. Please explain the analytical procedures used in the post-cracked state of the wall (i.e., cracks along the vertical and horizontal direction).
8. In Response No. 9 of Reference 3, wall 303.9 was identified as unqualified under tornado missile impact. However, it was stated that no modification was needed. Please provide justification for not modifying this wall (i.e., details of the wall with surrounding structures, quantitative results supporting your conclusion).

REFERENCES

1. ACI 531-79 and ACI 531-R-79
Building Code Requirements for Concrete Masonry Structures
American Concrete Institute, 1979
2. SGEB Criteria for Safety-Related Masonry Wall Evaluation
Developed by the Structural and Geotechnical Engineering Branch (SGEB)
of the NRC
July 1981
3. B. D. Johnson, Consumers Power Company
Letter to D. M. Crutchfield (NRC)
Subject; Palisades Plant - Response to Request for Additional
Information Regarding IE Bulletin 80-11, Masonry Walls
Consumers Power Company, November 8, 1982