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 NRC PDR BSiegel
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 Docket No. 50-298 AEOD
 IE-Jordan & Harmon
 ACRS-10
 HShaw KWichman

OCT 29 1982

Mr. J. M. Pilant, Director
 Licensing & Quality Assurance
 Nebraska Public Power District
 P. O. Box 499
 Columbus, Nebraska 68601

Dear Mr. Pilant:

Subject: Mark I Containment Program - Plant Unique Analysis Report (PUAR)

Re: Cooper Nuclear Station

The NRC staff and its consultant, Franklin Research Center (FRC) are reviewing the structural aspects of the Cooper Nuclear Station PUAR. As a result of the FRC review to date, FRC has developed the enclosed request for additional information. Please provide the requested information within 30 days of receipt of this letter.

This request for information was approved by the Office of Management and Budget under clearance number 3150-0091 which expires October 31, 1985.

Sincerely,

ORIGINAL SIGNED BY

Domenic B. Vassallo, Chief
 Operating Reactors Branch #2
 Division of Licensing

Enclosure:
 Request for Additional
 Information
 cc w/enclosure:
 See next page

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OFFICE	ORB#2:DL	ORB#2:DL	C-ORB#2:DL				
SURNAME	SNorris	BSiegel/cb	DVassallo				
DATE	10/29/82	10/29/82	10/29/82				

Mr. J. M. Pilant
Nebraska Public Power District

cc:

Mr. G. D. Watson, General Counsel
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P. O. Box 499
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Phoenix, Arizona 85073

Cooper Nuclear Station
ATTN: Mr. L. Lessor
Station Superintendent
P. O. Box 98
Brownville, Nebraska 68321

John T. Collins
Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Director
Nebraska Dept. of Environmental Control
P. O. Box 94877, State House Station
Lincoln, Nebraska 68509

Mr. William Siebert, Commissioner
Nemaha County Board of Commissioners
Nemaha County Courthouse
Auburn, Nebraska 68305

Mr. Dennis Dubois
USNRC
Resident Inspector
P. O. Box 218
Brownville, NE 68321




U. S. Environmental Protection Agency
Region VII Office
Regional Radiation Representative
324 East 11th Street
Kansas City, MO 64106

REQUEST FOR INFORMATION

- Question 1: Indicate if the piping systems such as vent drains have been considered in the plant unique analysis.
- Question 2: With reference to Section 1.2.1.2 of the PUA report, clarify which existing structural components were designed, fabricated, and installed to AISC Code or codes other than ASME Boiler and Pressure Vessel Code [2].
- Question 3: With regard to the pumps and valves attached to essential piping systems and not qualified, using Service Limits A or B, indicate whether the operability criteria are satisfied.
- Question 4: Indicate whether the containment vacuum breaker valves mounted on the vent internal to the torus or on piping associated with the torus have been analyzed as Class 2 components as required by the criteria [1].
- Question 5: Indicate whether all the applicable loads have been considered in the analysis and provide justification for neglecting the loads indicated in the attached Table 1.
- Question 6: Indicate whether all the bolted connections in linear type component supports meet the requirements of the criteria as specified in Section 4.4b of Reference 1.
- Question 7: If the methodology presented in Reference 4 is finally accepted by the NRC, the Licensee is required to confirm that the fatigue usage factors for the SRV and the torus attached piping are sufficiently small; therefore, a plant unique fatigue analysis of these piping systems is not warranted.
- Question 8: Justify the reasons for not considering a 180° segment of the torus (as required by the criteria [1]) in order to determine the effects of seismic and other nonsymmetric loads.
- Question 9: Indicate the piping systems that were classified as essential piping systems and specify the appropriate loading combinations.
- Question 10: With regard to the torus attached piping, indicate whether the anchor displacements due to torus motion were considered, as defined in Section 6.7 of the criteria [1].
- Question 11: Indicate if Tables 3.8, 4.6, 4.12, 5.4, 5.5, 5.6, 5.8, 6.4, and 6.6 of the PUA report correspond to the maximum stress encountered for the different structural components reviewed.
- (General Question)

Table 1. Structural Loading (from Reference 6)

Loads	Structures						Other Wetwell Interior Structures		
	Torus Shell	Torus Support System	Main Vents	Vent Header	Downcomers	SRV Piping	Above Norm Water Level	Above Bottom of Downcomers and Below Norm Water Level	Below Bottom of Downcomers
1. Containment Pressure and Temperature	X	X	X	X	X	X	X	X	X
2. Vent System Thrust Loads			X	X	X				
3. Pool Swell									
3.1 Torus Net Vertical Loads	X	X							
3.2 Torus Shell Pressure Histories	X	X							
3.3 Vent System Impact and Drag			X	X	X				
3.4 Impact and Drag on Other Structures			X						
3.5 Froth Impingement	⊗	⊗	⊗			⊗	⊗		
3.6 Pool Fallback			X			⊗			
3.7 LOCA Jet						⊗			
3.8 LOCA Bubble Drag						⊗			X
4. Condensation Oscillation									
4.1 Torus Shell Loads	X	X							
4.2 Load on Submerged Structures						⊗			
4.3 Lateral Loads on Downcomers				⊗	⊗			X	X
4.4 Vent System Loads			X	X					
5. Chugging									
5.1 Torus Shell Loads	X	X							
5.2 Loads on Submerged Structures						⊗		X	X
5.3 Lateral Loads on Downcomers				⊗	⊗				
5.4 Vent System Loads			X	X					
6. T-Quencher Loads									
6.1 Discharge Line Clearing						X			
6.2 Torus Shell Pressures	X	X							
6.4 Jet Loads on Submerged Structures					⊗	X		X	X
6.5 Air Bubble Drag					X	X		X	X
6.6 Thrust Loads on T-Quencher Arms						⊗			
6.7 S/RVDL Environmental Temperature						⊗			
7. Ramshead Loads									
7.1 Discharge Line Clearing	⊗	⊗				⊗			
7.2 Torus Shell Pressures						⊗			
7.4 Jet Loads on Submerged Structures	⊗	⊗				⊗			
7.5 Air Bubble Drag					⊗	⊗		⊗	⊗
7.6 S/RVDL Environmental Temperature					⊗	⊗		⊗	⊗

 Loads required by NUREG-0661[1] and included in PUA report.
 Loads required by NUREG-0661[1] and not included in PUA report.
 Not applicable.

3. REFERENCES

1. NEDO-24583-1
"Mark I Containment Program Structural Acceptance Criteria Plant Unique Analysis Application Guide"
General Electric Co., San Jose, CA
October 1979
2. American Society of Mechanical Engineers
Boiler and Pressure Vessel Code, Section III, Division 1
"Nuclear Power Plant Components"
New York: 1977 Edition and Addenda up to Summer 1977
3. NEDO-21888 Revision 2
"Mark I Containment Program Load Definition Report"
General Electric Co., San Jose, CA
November 1981
4. P. M. Kasik
"Mark I Piping Fatigue," Presentation at the NRC meeting
Bethesda, MD
September 10, 1982