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Dear Mr. Williams:

Subject: Requests for Additional Information in Zimmer 1 Operating License Application

The "Report of the NRC Evaluation Team on the Quality of Construction at the Zimmer Nuclear Power Station", NUREG-0969, dated April 1983, recommended certain actions be taken to provide reasonable assurance that systems, structures, and components are built in accordance with the requirements of the NRC regulations. Most of the recommendations in NUREG-0969 concern tests, inspections and other verifications that the as-built hardware conforms to design specifications and drawings which will be followed up by staff in Region III. Some of these recommendations affect design and construction criteria and engineering analyses which are described in the Final Safety Analysis Report (FSAR) and reviewed by the staff in NRR. The purpose of this letter is to request that additional information be provided in the Zimmer 1 operating license application in response to certain recommendations in NUREG-0969 regarding design criteria and analyses.

We request that you amend your Final Safety Analysis Report to respond to the questions in the Enclosure. Our review schedule is based on the assumption that the additional information will be available for our review by August 31, 1983. If you wish clarification of the requests or if you cannot meet these dates, you should telephone the Licensing Project Manager, L. Kintner, within seven days after receipt of this letter.

Sincerely,

Original signed by:  
B. J. Youngblood

B. J. Youngblood, Chief  
Licensing Branch No. 1  
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Enclosures:  
Requests for Additional  
information

cc w/encs.: See next page

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ENCLOSURE

REQUESTS FOR ADDITIONAL INFORMATION IN THE SAFETY REVIEW

WILLIAM H. ZIMMER NUCLEAR POWER STATION, UNIT NO. 1

DOCKET NO. 50-358

Requests by the following branches in NRC are included in this enclosure. Requests are numbered sequentially. The number in parenthesis following each question number is the section of NUREG-0969 which contains the recommendation of the NRC Evaluation Team.

<u>BRANCH</u>	<u>QUESTION NO.</u>
Mechanical Engineering Branch	1,2
Reactors Systems Branch	3
Structural and Geotechnical Engineering Branch	4,5,6
Power Systems Branch	7, 8, 9

REQUEST FOR ADDITIONAL INFORMATION REGARDING RECOMMENDATIONS IN NUREG-0969,

"Report of the NRC Evaluation Team  
on the Quality of Construction at the Zimmer Nuclear Power  
Station", April 1983."

1 (2.4.8)

In Section 2.4.8 of NUREG-0969, "Report of the NRC Evaluation Team on the Quality of Construction at the Zimmer Nuclear Power Station," dated April 1983, the staff identified an item regarding the apparent inadequacy of the HVAC ductwork bolting specification. The NRC evaluation team (NET) found numerous connections where the fastener nut, or hex bolt was partly drawn into the slotted flange hole of the HVAC ducting because washers were not installed under the nuts nor bolts. Thus, the installation of bolts into the oversize bolt holes without washers resulted in a condition where the bolt-required tightness and strength might not be properly developed. The use of washers is not mentioned in the specifications. Thus, the staff concern regarding the bolting adequacy appears to be related to design rather than construction.

Provide an assessment of the above identified design deficiency and the basis for assuring that the integrity of the HVAC ductwork bolting is acceptable.

Provide the corrective measures (if required) that will be taken to assure the adequacy of the HVAC bolting integrity.

2 (2.4.4.1.4)

In Section 2.4.4.1.4 of NUREG-0969 dated April 1983, the NRC Evaluation Team (NET) identified an item regarding the codes and standards used for the design of piping hangers. The staff found that the FSAR does not accurately discuss the design practices used by the applicant. The applicant's practices was: (a) to procure standard catalog pipe support components manufactured according to ANSI B31.7 requirements, (b) field weld and modify to AISC requirements, (c) to design any integrally welded attachments to the piping according to ANSI B31.7 requirements, and (d) to design the balance of the hanger as supplementary steel using the AISC Code in conjunction with the NRC Standard Review Plan (SRP) Section 3.8.4 (NUREG-0800) (according to the applicant's interpretation of ANSI B31.7, paragraph I-720.2.4 requirements on supplementary steel).

In Revision 94 to the FSAR, the applicant provided changes which addressed (a) the design of manufacturer catalog components and (d) the design of supplementary steel used for pipe supports that non-integral to the pipe pressure boundary. However, the applicant has not yet documented (b) the codes used in design of field welds and (c) the design of any integrally welded attachments.

Provide the FSAR changes to document the design practices (b) and (c) identified above.

3 (2.4.3.1.4) NUREG-0969 states that residual heat removal (RHR) discharge pressure indicators were not installed in local instrument racks as specified on design drawings. NUREG-0969 also states that applicant advised the NRC Evaluation Team that local indicators are not required for RHR discharge pressure and the drawings would be changed. Confirm that these pressure indicators are not required for remote shut down of the plant. Also provide the surveillance test requirements planned for these RHR discharge pressure indicating switches (PIS IE 12-No. 19A and PIS IE 12-No. 19B).

4 (2.4.1.1) NUREG-0969 indicates that the seismic Category I buried service water pipeline, which provides emergency cooling water to the plant, was not included in the QA surveillance program for backfill compaction operations. This appears to be inconsistent with FSAR Table 3.2.1. Revision 95, which indicates that the service water pipeline is subject to the quality assurance requirements of 10 CFR 50, Appendix B. NUREG-0969 also indicates that other safety-related structures and buried systems were not included in the QA soils surveillance program.

Provide the following information;

- (a) Identify all safety-related structures and systems founded on or in backfill which did not have QA surveillance during compaction operations and include this information in notes to FSAR Table 3.2.1. However, Table 3.2.1 should also clearly indicate that any future soils compaction activities for their safety related structures and systems are subject to QA surveillance under Appendix B, 10 CFR 50.
- (b) For all structures and systems identified in (a), including the service water pipeline, investigate and determine the as-constructed backfill density using appropriate ASTM field and laboratory sampling and testing procedures and perform engineering evaluations to demonstrate that in situ densities are adequate for design loads.

5 (2.4.2.2) In section 2.4.2.2, NUREG-0969, three types of structural deficiencies with respect to the masonry wall construction have been identified and they are:

- (a) unfilled collar joints
- (b) inadequate embedded support column connections
- (c) discontinuous and missing joint reinforcement

Provide an evaluation of the significance of these deficiencies from the point of view of design using the criteria established for Zimmer and in conformance with the staff's requirements. Indicate the reduction in margin of safety on the basis of the extent of construction deficiencies uncovered and your evaluation of their significance. Provide a conclusion as to the structural adequacy of the safety-related masonry walls which have not been inspected. Describe practical measures to upgrade masonry walls to meet the minimum requirements.\*

- 6 (2.4.2.4) In Section 2.4.2.4 of NUREG-0969, it has been identified that certain bolts in the flume structure are undergoing significant corrosion, and corrosion was not considered in the original design nor was there any inservice inspection specified. Indicate your planned action to alleviate this situation.
- 7 (2.4.3.1.4) In Section 2.4.3.1.4 (4) of NUREG-0969, the NRC Evaluation Team concluded that there is a higher probability of electrical faults occurring at Zimmer than with normal construction and turnover situations due to the extensive amount of rework modifications and potential for damaged cables resulting from the rework. In this regard, describe the steps you have taken to insure the integrity of the cables in these areas following completion of the rework modification.
- 8 (2.4.3.1.5) In NUREG-0969, the NRC Evaluation Team recommended that you consider installing the backup overcurrent protection devices in containment penetration circuits before initial fuel load. The Zimmer SER Supplement No. 1 originally accepted your commitment to install the second means of overcurrent protection at the first refueling outage. However, in view of the length of time elapsed since that commitment (2 years) the staff considers it reasonable to install these backup overcurrent devices prior to initial fuel load. Provide us with your commitment to complete the installation of these devices prior to fuel load or justification for not completing prior to fuel load.
- 9 (2.4.3.2.2) NUREG-0969 referenced a program which you have instituted to analyze all non-Class 1E and associated cables and their circuits sharing common raceways. The NUREG also stated that you will analyze those cables and their circuits which do not maintain the specified separation distance in other locations such as panel interiors and the transition between panels and raceways. Provide the results of this analysis and your methodology for NRR staff review.

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\*The use of joint reinforcement as a structural element is not acceptable unless verified by testing. An NRC position paper which fully describes our criteria will be available in the near future.