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September 18, 1975

Mr. Karl R. Geller  
Assistant Director for Operating Reactors  
Division of Reactor Licensing  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Subject: Cooper Nuclear Station Compliance With  
10CFR50, Appendix J, Primary Reactor  
Component Leakage Testing for Water-  
Cooled Power Reactors

Dear Mr. Geller:

This letter is in response to your letter to the District dated August 5, 1975 which requests information concerning the compliance with 10CFR50, Appendix J.

A review of the Cooper Nuclear Station Technical Specifications and 10CFR50, Appendix J indicates that the District is in full compliance with Appendix J with the following exceptions:

- 1.) The Main Steam Isolation Valves (MSIV's) are tested at 29 psig (P<sub>c</sub>) instead of the required 58 psig (P<sub>a</sub>).
- 2.) The personnel air lock door is tested at intervals no longer than one year at 58 psig (P<sub>a</sub>) and at 3 psig after each opening during the one year interval between the 58 psig tests.
- 3.) The void between the bellows located in the main steam line and feedwater line penetrations are tested at 5 psig instead of the required 58 psig (P<sub>a</sub>).
- 4.) The feedwater checkvalves are tested with water.

The present method of testing the MSIV's calls for pressurization between the inbound and outbound isolation valves. This procedure loads the inbound valve in the opposite direction as the valve design and therefore requires the reduced test pressure. Additional testing required by the NRC (letter from Vice A. Moore to Ronald E. Radtke, dated July 27, 1973) specifies the valve testing options of single valves, pairs of valves or manifold bank testing of all eight valves.

Present plans for MSIV testing call for leakage testing to be done in October, 1975 with an approved method using a 29 psig test pressure and the attempt to develop a new procedure of testing pressurization from the vessel. The one

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procedures will use a 58 psig test pressure. After this procedure has been perfected and proven operational, a request for a Technical Specification change will be submitted. The allowance for midcycle testing at 29 psig by use of any of the three prescribed options will be retained.

The existing personnel air lock door opens inwardly and seats with accident pressure. The present technical specifications require testing the personnel air lock at 58 psig at intervals no longer than one year. This test requires that a strengthener be installed on the containment side of the inside door. The air lock doors are tested for air leakage at 3 psig after each opening during the test interval between the annual 58 psig test.

No changes are contemplated from the existing testing requirements. Testing at an increased pressure of 58 psig (Pa) would require drywall entry for strengthener installation. This can only be done during a shutdown condition. The pressurization of the door in the wrong direction also entails some risk of permanent deformation which would be greatly increased if all tests were run at 58 psig. It is the opinion of the District that a yearly test at 58 psig is sufficient to show physical integrity and the 3 psig test after door operation shows the seal condition. An increase to a 6 month test frequency also places an additional operational restraint on the plant which should ideally operate for periods longer than this without required shutdown and drywall entry.

The main steam and feedwater testable penetrations consist of a double layered metal bellows. The inboard high pressure side of the bellows uses the existing drywall pressure. Therefore the bellows is tested in its entirety when the drywall is tested. The bellows layers are tested for integrity of both layers by pressurizing the void between the layers to 5 psig. Any higher pressure could cause permanent deformation, damage and possible ruptures of the bellows. While this testing between the bellows does not meet the 58 psig requirement of Appendix J, it is felt that the testing of the penetration as a complete unit with the drywall pressurization test and the indication of the integrity of both bellows layers provides reasonable assurance that the penetration will withstand the accident conditions.

The feedwater check valves, which are of a tilting disc design, are currently leak tested with water instead of air as required by Appendix J. Water at a constant 58 psig pressure is supplied to the system downstream side of the valve. After the leak rate has established to produce a constant rate of flow on the upstream side of the valve, the flow is measured over a given time span. This information is used to calculate leak rate for these valves which will provide an adequate indication of the valve's condition.

The Cooper Nuclear Station Antineutronic Technical Specifications were issued with the facility operating license on January 12, 1974. Up until that time, meetings were held with the NRC licensing staff to assure that the CNS Technical Specifications were in compliance with the 10CFR30, Appendix J. The four areas of non-compliance discussed in this letter were discussed at length with the



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The existing personnel air lock door opens inwardly and seals with accident pressure. The present technical specifications require testing the personnel air lock at 58 psig at intervals no longer than one year. This test requires that a straghtback be installed on the containment side of the inside door. The air lock doors are tested for air leakage at 3 psig after each opening during the test interval between the annual 58 psig test.

No changes are contemplated from the existing testing requirements. Testing at an increased pressure of 58 psig (Pa) would require drywall entry for straghtback installation. This can only be done during a shutdown condition. The pressurization of the door in the wrong direction also entails some risk of permanent deformation which would be greatly increased if all tests were run at 58 psig. It is the opinion of the District that a yearly test at 58 psig is sufficient to show physical integrity and the 3 psig test after door operation shows the seal condition. An increase to a 6 month test frequency also places an additional operational restraint on the plant which should ideally operate for periods longer than this without required shutdowns and drywall entry.

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The feedwater check valves, which are of a tilting disc design, are currently leak tested with water instead of air as required by Appendix J. Water at a constant 58 psig pressure is supplied to the system downstream side of the valve. After the leak rate has stabilized to produce a constant rate of flow on the upstream side of the valve, the flow is measured over a given time span. This information is used to calculate leak rate for these valves which will provide an adequate indication of the valve's condition.

The Cooper Nuclear Station Radiological Technical Specifications were issued with the facility operating license on January 18, 1974. Up until that time, meetings were held with the ABE licensing staff to assure that the CRG Technical Specifications were in compliance with the 10CFR30, Appendix J. The four areas of non-compliance discussed in this letter were discussed at length with the