



Nebraska Public Power District

COOPER NUCLEAR STATION
P.O. BOX 98, BROWNVILLE, NEBRASKA 68321
TELEPHONE (402)825-3811
FAX (402)825-5211

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May 3, 1994

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Subject: NPPD Response to Inspection Report 50-298/94-07 (Reply to
Inspection Followup Item 298/9407-01)

Gentlemen:

During an NRC inspection conducted on February 28, 1994, an inspection followup item was identified which involved missing "O" rings in gaseous effluent radiation monitor sample assemblies. The following is a summary and associated response to inspection followup item 298/9407-01.

FOLLOWUP ITEM SUMMARY

On February 15, 1994, while performing a training session on RMV-RM-308, RW/ARW (Radwaste/Augmented Radwaste) Building high range gaseous effluent radiation monitor, a particulate/iodine sample assembly was found loose in its assembly holder. Investigations revealed the inner bottom "O" ring was missing in the assembly. If the high range gaseous effluent radiation monitor would have come on line to monitor a release, the gaseous detector had the potential of analyzing a sample that was diluted with room air. This would result in a lower than actual release rate indication from the RW/ARW Building. Further investigations revealed that the inner top "O" ring was also missing from high range and normal range gaseous effluent radiation monitor sample assemblies. This resulted in the additional potential of analyzing diluted gaseous effluent samples.

EVALUATION/ANALYSIS

An evaluation was performed in an attempt to determine the length of time that the "O" rings had been missing in the high range gaseous effluent radiation monitor sample assemblies. The most probable date that the inner top "O" rings were removed from the sample assemblies was sometime in late 1985. This was determined in discussions with Chemistry Technicians, who confirmed the use of an alternate iodine cartridge which was available at that time. The substitution of this cartridge resulted in a loose fit of the particulate filter and iodine cartridge which was identified by technicians. Upon removal of the inner top "O" ring in the sample assembly, a tight fit of the particulate filter and iodine cartridge could be obtained by tightening down on the sample assembly lid. Discussions with the vendor indicated that the inner top "O" ring was not necessary to obtain a seal, provided the filter and cartridge were tight in the sample assembly. All assemblies were probably changed to this configuration at that time. It is believed this alternate iodine cartridge was used for approximately six months before returning to the original design cartridge. However, use of the inner top "O" ring was not reinitiated when the return to the original design cartridge was made.

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The length of time the inner bottom "O" ring was missing from the sample assembly on the RW/ARW Building high range gaseous effluent radiation monitor could not be determined. This deficiency is believed to be personnel error in reassembly of the sample assembly during filter and cartridge change out, and may have occurred at the time of the last known source calibration of the monitor which was August 17, 1993. It should be noted that although the sample assembly was loose in its assembly holder, due to the missing inner bottom "O" ring, the monitor may have been capable of performing its intended function.

The sample assemblies on the Elevated Release Point (ERP) and Turbine Building high range gaseous effluent radiation monitors were not found to be loose in their assembly holders, thus it is reasonable to believe that they would have performed their intended function, even though they failed the very conservative, and previously unspecified, post maintenance leak testing outlined by the system engineer. Additionally, all of the high range gaseous effluent radiation monitors have never come on line in an accident scenario thus, no off-site release determinations have ever been based on gaseous effluent data from these monitors.

An evaluation was also performed in an attempt to determine the length of time that the inner top "O" ring had been missing in the normal range gaseous effluent radiation monitor sample assemblies. The most probable date that the inner top "O" rings were removed was late 1985, which was when use of the alternate iodine cartridge began. However, reasonable assurance that the normal range gaseous effluent radiation monitor and sampling assemblies have performed their intended function of determining gaseous and particulate releases, is based on the following:

1. The sample assemblies on the normal range gaseous effluent radiation monitors are put in place by physically hand tightening hold down nuts until the assembly is tightly secured whereas, the high range gaseous effluent radiation monitor sample assemblies are held in place by spring tension.
2. A sample assembly on a normal range gaseous effluent radiation monitor was tested for leakage per Chemistry Procedure 8.8.8, with the inner top "O" ring missing and the alternate iodine cartridge installed as discussed above. In this configuration, the sample assembly passed the test and no leakage was evident.
3. Since approximately September 1, 1992, the normal range gaseous effluent radiation monitor sample assemblies have been periodically checked for leakage per Chemistry Procedure 8.8.8. During this time frame, the sample assemblies contained the correct iodine cartridge with the top inner "O" ring missing and no leakage problems have been noted.

CORRECTIVE ACTIONS TAKEN AND RESULTS ACHIEVED

The RW/ARW high range gaseous effluent radiation monitor, RMV-RM-30B, was declared inoperable on February 15, 1994, at 1348. Maintenance Work Requests (MWR's) were generated on February 15, 1994, to replace the "O" rings in the Elevated Release Point (ERP) (RMV-RM-3B), Turbine Building (RMV-RM-20B), and RW/ARW Building (RMV-RM-30B) high range gaseous effluent radiation monitor

sample assemblies. On February 15, 1994, the bottom "O" ring identified as missing in the RW/ARW Building high range gaseous effluent radiation monitor sample assembly was verified to be present in the ERP and Turbine Building high range gaseous effluent radiation monitor sample assemblies. On February 18, 1994, three "O" rings in the RW/ARW high range gaseous effluent radiation monitor sample assemblies were replaced. At that time, a review of the vendor drawing for the sample assembly showed a fourth "O" ring in the upper portion of the sample assembly. However, a parts list that indicated the "O" rings applicable to the drawing, was not available. The "O" rings for the sample assembly were replaced as shown on the drawing. Post maintenance testing for leakage, as directed by the system engineer, was completed satisfactorily and the monitor was then declared operable on February 18, 1994, at 1439. Engineering confirmed the drawing's applicability to these installations, and a subsequent inspection of the sample assemblies on the ERP and Turbine Building monitors on February 22, 1994, determined that the inner top "O" ring for each of the sample assemblies was missing. The ERP and Turbine Building high range gaseous effluent radiation monitors were declared inoperable on February 22, 1994, at 1545. The system engineer worked with the vendor to expedite procurement of the "O" rings specified in the sample assembly drawing. Also on February 22, 1994, the Chemistry Technician who changed out (on February 21, 1994) the iodine and particulate filters on the normal range gaseous effluent radiation monitors (which have the same sample assembly in question) was queried about the change out of these filters. The technician stated that he had tested all the normal range gaseous effluent radiation monitor sample assemblies for air in-leakage per Chemistry Procedure 8.8.8 and all assemblies passed. Based on this information, the system engineer performed an operability determination on the Technical Specification related normal range gaseous effluent radiation monitors and the RW/ARW Building high range gaseous effluent monitor. The operability determination was approved by the Station Operations Review Committee on February 23, 1994. On February 24, 1994, the sample assembly "O" rings were received on site and MWR's were utilized to install the "O" rings in the ERP and Turbine Building high range gaseous effluent radiation monitor sample assemblies. Installation and satisfactory completion of the post maintenance testing was completed and the ERP and Turbine Building high range gaseous effluent radiation monitors were declared operable on February 25, 1994. Also on February 25, 1994, MWR's were utilized to install the "O" rings specified in the sample assembly drawing, in all of the normal range gaseous effluent radiation monitor sample assemblies and the RW/ARW Building high range gaseous effluent radiation monitor sample assemblies. All sample assemblies satisfactorily met the post maintenance testing. This completed the replacement of all "O" rings in all of the normal and high range gaseous effluent radiation monitor sample assemblies and subsequent satisfactory acceptance testing. These monitors were then considered fully operational.

On March 3, 1994, a question arose concerning installation of "O" rings in the alternate gaseous effluent samplers which are utilized when the normal range gaseous effluent radiation monitors are incapable of collecting particulate and iodine samples. The "O" rings on all alternate gaseous effluent samplers were verified to be installed, and several alternate gaseous effluent samplers were selected, and satisfactorily leak tested, to ensure that the existing sampler configuration was adequate. As a precautionary measure new "O" rings were ordered for these samplers. On March 23, 1994, new "O" rings were installed in all of the alternate gaseous effluent samplers and the samplers satisfactorily leak tested.

U. S. Nuclear Regulatory Commission

May 3, 1994

Page 4

CORRECTIVE ACTIONS WHICH WILL BE TAKEN TO AVOID FURTHER RECURRENCE

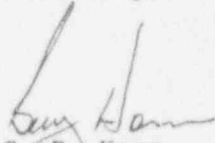
Replacement of sample assembly "O" rings will be formalized (by procedure or PM), on all high and normal range gaseous effluent radiation monitor sample assemblies, including acceptance testing for leakage. Procedures will be revised to require leak testing, each time that particulate filters and/or iodine cartridges are changed out on these monitors (high and normal range).

Replacement of the "O" rings in the alternate gaseous effluent samplers will be formalized (by procedure or PM) to include acceptance testing for leakage. Additionally Procedure 4.15, Elevated Release Point and Building Radiation Monitoring Systems, will be revised to include a leak test when an alternate gaseous effluent sampler is placed in service.

The License Event Report generated as a result of this event has been covered in a tailgate session with all Chemistry Personnel.

Should you have any questions concerning this matter, please contact me.

Sincerely,



G. R. Horn
Vice President-Nuclear

GRH:RJM

cc: Regional Administrator
USNRC - Region IV

NRC Resident Inspector
Cooper Nuclear Station