



DMB

Northern States Power Company

Prairie Island Nuclear Generating Plant

Route 2
Welch, Minnesota 55089

March 20, 1984

Mr. James G. Keppler
Regional Administrator III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

PRINCIPAL STAFF			
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PAO		SCS	
SGA		ML	
ENF		File	h

Dear Mr. Keppler:

Prairie Island Nuclear Generating Plant
Docket No. 50-282 License No. DPR-42
Docket No. 50-306 License No. DPR-60

In a letter dated January 30, 1984 from NSP to Mr. James G. Keppler, preliminary information was provided concerning the potential lapse of quality control at the Hills-McCanna actuator manufacturing facility. At that time it was concluded that the health and safety of the public is not compromised with continued operation of Prairie Island with Hills-McCanna actuators installed in safety related applications. The purpose of this letter is to provide the necessary information to resolve this issue.

On February 16, 1984, Northern States Power Company personnel visited the office and manufacturing facilities of Pacific Air Products Company (PAPCO) to perform a documentation review of records associated with the purchase of Hills-McCanna actuators by PAPCO for the Prairie Island Plant. The purpose of this documentation review was to verify PAPCO's compliance with Pioneer Service and Engineering specifications Hiawatha 505, M1282 and M1283 and the NSP Quality Procedure D-9 "Quality Assurance Requirements for Fabrication, Construction, Installation or Testing" for the actuators supplied. The results of the review indicate:

1. The actuators were purchased from a Hills-McCanna supplier as commercial grade actuators.
2. The actuators were then operated twenty-five times after their installation on the damper. This sequence testing was performed either at the manufacturing plant or at Prairie Island. Documented evidence is not available which specifically shows that this operation was performed. The

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PAPCO quality assurance program now provides for the documentation of this activity. In the early 1970's this testing was accomplished but not thoroughly documented in a formal quality assurance program.

3. Correspondence available at Prairie Island and/or PAPCO does indicate that an operational test of the dampers with actuators was performed. In addition, each damper has a brass tag fixed to it indicating that a leakage test was performed and completed satisfactorily.

Due to the design, utilization and evaluation of the actuators, a documented quality assurance program at Hills-McCanna is not vital in demonstrating the actuators qualified for further use. Qualification of the actuators for safety related applications at Prairie Island is substantiated because:

1. A seismic analysis for the damper/actuator was performed by Nuclear Services Corporation (NSC) and approved by Pioneer Service and Engineering Company. Conservative seismic loads were assumed in the analysis. The resultant stresses are negligible because the heaviest actuator at Prairie Island weighs only 47 pounds and it is rigidly mounted to the damper. This precludes loss of function due to a common mode failure during a seismic event. The original seismic analysis supplied by NSC has been re-evaluated by Fluor Engineers, Inc. to ensure that the actuator mountings are acceptable in accordance with the original purchasing specification and the Updated Safety Analysis Report. It is concluded that the analysis adequately demonstrates that the mounting details, as documented in the calculations, are acceptable.
2. Potential common mode failures within the actuator indicative of wet air or vibrations have been eliminated due to modifications to the actuators, changes in damper orientation and modifications to the plant instrument air system.
3. The Final Safety Analysis Report and the Updated Safety Analysis Report have no specific requirements for actuation times for any of the identified dampers. In some cases critical system parameters which are dependent upon damper actuation times are monitored to determine if systems are operable. Forty-four of the 86 actuators have specific identified actuation times which meet or exceed the original purchase order specifications. The balance of the actuators have not been cycled to determine their actuation times. Subsequent testing of the remainder

of the actuators is not planned. Testing of these these actuators in their present configuration would only be a measurement of the pilot solenoid valve orifice size (C_v Ratio). Significant amounts of two unit affiliated safety related equipment would have to be taken out of service to obtain test data as originally obtained.

4. Approximately one actuator failure per 100 actuator years has been demonstrated at Prairie Island. An actuator failure has not occurred in the past five years. All failures have occurred on the containment fan coil unit dampers which is the most severe service. This excellent operating history can be attributed to successful preventive maintenance and monitoring of the actuators.
5. Past surveillance testing has demonstrated operability and has detected failures. Future surveillance testing will continue to demonstrate operability and detect failures. Failures are quickly detected because most limit switch indications are generated from damper shaft position and not from actuator position. Discontinuity between the actuator and the damper blade is readily detected by this positive indication. Any surveillance data indicative of abnormal conditions is acted upon promptly.
6. Future actuator integrity will continue to be verified through the surveillance program required by the Technical Specifications and by an additional local inspection of the containment fan coil unit discharge damper actuators at refueling intervals.

Based on our investigations it is concluded that PAPCO complied with the required specifications as dictated in the original purchase order. The actuators were qualified when supplied to Prairie Island and their qualifications have been maintained via preventive maintenance, modifications and surveillance which have been performed and will continue to be performed.

The potential for undetected lapses in vendor quality control requirements in the future is precluded by the NSP procurement control program. All procurement is performed in accordance with Administrative Control Directives 5ACD 7.1 and 5ACD 7.2. All requisitions receive both an Engineering Review and a Quality Control Engineering Review to determine if original technical requirements are being met. If original technical requirements cannot be met, an Engineering Evaluation is performed. This evaluation assures that interfaces, interchangeability, safety, fit and function are not adversely affected.

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A formal receipt inspection is performed on all safety related procured items by qualified/certified receipt inspectors. The delivered products and documentation are thoroughly reviewed and compared with the purchase requisition requirements and the applicable code requirements.

The Prairie Island Operations Committee reviewed this final investigative response and it has been concluded that the Hills-McCanna issue does not involve an unreviewed safety question. The health and safety of the public is not compromised with continued operation of Prairie Island.

Sincerely,


E. L. Watzi
Plant Manager

ELW/jm

cc: G. Charnoff